

FINAL

**ENVIRONMENTAL ASSESSMENT FOR THE
CALICO PEAK UTILITY 33 kV POLE LINE
PROJECT**

CACA-56675

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Acronyms and Abbreviations

µg/m ³	micrograms per cubic meter
µm	micrometers
AB	Assembly Bill
ACEC	Area of Critical Environmental Concern
APCD	Air Pollution Control District
AQMD	Air Quality Management District
AR4	Fourth Assessment Report
ARPA	Archaeological Resources Protection Act
Basin Plan	Lahontan Basin Water Quality Control Plan
BLM	Bureau of Land Management
BMPs	Best Management Practices
BP	before present
BSA	biological survey area
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDCA	California Desert Conservation Area
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH ₄	methane
CMA	Conservation Management Action
CDNCL	National Landscape Conservation System
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CWA	Clean Water Act
DFAs	Development Focus Areas
DOD	Department of Defense
DRECP	Desert Renewable Energy Conservation Plan
EA	Environmental Assessment
EIS	Environmental Impact Statement

EO	Executive Order
FCR	field contact representative
FESA	federal Endangered Species Act
FLPMA	Federal Land Policy and Management Act of 1976
FONSI	Finding of No Significant Impact
GHG	greenhouse gas
GWP	global warming potential
GPLs	General Public Lands
H ₂ S	hydrogen sulfide
HFCs	hydrofluorocarbons
HU	Hydrologic Unit
IPCC	Intergovernmental Panel on Climate Change
KOP	key observation point
kV	kilovolt
LUPA	Land Use Plan Amendment
MBTA	Migratory Bird Treaty Act
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection & Repatriation Act
NAHC	Native American Heritage Commission
NCL	National Landscape Conservation System
NEPA	National Environmental Policy Act
NLCS	National Landscape Conservation System
NO ₂	nitrogen dioxide
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	ozone
OHV	off highway vehicle
Pb	lead
PFCs	perfluorinated carbons
PM ₁₀	respirable particulate matter
PM _{2.5}	fine particulate matter
ppb	parts per billion
ppm	parts per million
Proposed Action	Calico Peak Utility 33-kilovolt Pole Line Project
PRPA	Paleontological Resources Preservation Act
REAT	Renewable Energy Action Team
REAT Agencies	Renewable Energy Action Team
ROD	Record of Determination

ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SBCM	San Bernardino County Museum
SCE	Southern California Edison
SF ₆	sulfur hexafluoride
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SRMA	Special Recreation Management Area
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
VPL	Variance Process Land
VRM	Visual Resource Management
WEAP	Worker Environmental Awareness Program
WSA	wildlife survey area

Chapter 1

Introduction

This Environmental Assessment (EA) has been prepared by Southern California Edison (SCE) for the Barstow Field Office of the Bureau of Land Management (BLM) to analyze the potential environmental impacts associated with development of the Calico Peak Utility 33-kilovolt (kV) Pole Line Project (Proposed Action), which entails extending the Remote 33 kV overhead distribution circuit to an American Tower Corporation-owned communication facility at the top of Calico Peak in the Calico Mountains.

The Council on Environmental Quality's National Environmental Policy Act (NEPA) Regulations require the preparation of an EA to determine whether the Proposed Action has the potential to cause significant environmental effects (40 Code of Federal Regulations [CFR] 1508.9), because this action has not been categorically excluded from such analysis under BLM regulation. This EA includes the scope and purpose of this document, issues identified for analysis, and conformance with laws, regulations, policies, and plans in Chapter 1; a specific description of the Proposed Action and alternatives in Chapter 2; a description of the affected environment and analysis of environmental effects from the alternatives and mitigation measures proposed by SCE or BLM in Chapter 3.

EAs are prepared by federal agencies to aid in determining if a Proposed Action may significantly affect the quality of the human environment. If the Proposed Action will not significantly affect the quality of the human environment, then the agency prepares a Finding of No Significant Impact (FONSI). If the Proposed Action may result in significant effects even after mitigation is implemented, then the agency must prepare an Environmental Impact Statement (EIS) prior to its decision. According to Section 1508.9(a) of the Council on Environmental Quality's NEPA Regulations, an EA serves to:

- Briefly provide sufficient evidence and analysis for determining whether to prepare a FONSI or an EIS
- Aid an agency's compliance with NEPA when an EIS is not necessary
- Facilitate preparation of an EIS when one is necessary

This EA has been prepared to analyze and document the environmental effects associated with the Proposed Action. BLM will release this EA and a draft FONSI for a 30-day public review and comment period. The FONSI is a finding of environmental effects, not a decision on the right-of-way (ROW) permit. After considering comments from the public, BLM will determine whether to issue a final FONSI, require additional environmental analysis, or require an EIS. If a FONSI is issued, the final decision on the ROW permit would be made at that time. If BLM determines that an EIS is required, it would follow the notice and comment procedures of NEPA applicable to the EIS process.

This EA will be used by BLM, Barstow Field Office, to support its review and potential approval of a ROW grant, CACA-56675, on federal lands managed by BLM to comply with NEPA. The proposed ROW would be used for the construction, operation, and maintenance of the extended overhead distribution line.

1.1 Project Overview

The Proposed Action would require permanent and temporary facility ROW for the construction, operation, and maintenance of the 33 kV overhead distribution line extension. Portions of the project would be located on California Department of Transportation (Caltrans) ROW and public lands administered by BLM and the Department of Defense (DOD), US Army Fort Irwin. The project is a distribution line, which delivers power to end users (e.g., homeowners, commercial uses). Distribution lines are substantially different from transmission lines, which deliver power, often at a much higher voltage, between generation facilities or major load centers (i.e., large groups of users).

The existing communication facility is on a diesel-powered generator that requires regular maintenance and two truck trips per week to refuel. Additionally, the existing access roads traverse rugged terrain, are difficult to negotiate during periods of inclement weather, and are often impassable after large storm events, resulting in extended power outages. The installation of and connection to a permanent electrical facility would increase electrical service reliability and eliminate the communication facility's reliance on generator power. A reliable electrical service is essential to continue operation of the existing communication facility.

The alternatives under consideration include the Proposed Action and the No Action Alternative. The Proposed Action entails constructing an extension of the existing Remote 33 kV overhead distribution line in Fort Irwin Road for approximately 4.5 linear miles to a communication tower at the top of Calico Peak in the Calico Mountains, installing 81 new single wood poles and 13 anchors and 25 down guys, and removing 1 existing wood pole. The project is approximately 6.5 miles north of the unincorporated community of Yermo along the Interstate 15 corridor in San Bernardino County, California, on the U.S. Geological Survey Yermo, Lane Mountain, and Coyote Lake 7.5-minute topographic quadrangles. Figures 1-1 and 1-2 show the regional location of the project and the existing conditions. Figures 1-3a through 1-3g provide an overview of the project limits and detailed aerial maps.

1.1.1 Location and Setting

The Proposed Action would extend the existing Remote 33 kV overhead distribution line originating adjacent to Fort Irwin Road approximately 6.5 miles north of the unincorporated community of Yermo in San Bernardino County, California, on the U.S. Geological Survey Yermo, Lane Mountain, and Coyote Lake 7.5-minute topographic quadrangles. The distribution line would be extended approximately 4.5 linear miles to the east of Fort Irwin Road to a communication tower at the top of Calico Peak in the Calico Mountains. The ROW within the limits of the project boundaries would be approximately 4.43 miles long (approximately 3.01 miles on BLM land) and 25 feet wide, encompassing approximately 13.42 acres (approximately 9.12 acres on BLM land). The ROW would be a maximum of 25 feet wide. All work would be completed within the ROW.

Proposed Action-related activities would take place on Caltrans ROW and public lands administered by BLM and DOD, US Army Fort Irwin. The land uses in the immediate vicinity are open space and land designated for resource conservation and off-highway vehicle recreation areas. Approximately 3.5 miles to the south of the project area is the Calico Ghost Town, and approximately 6.5 miles south is the unincorporated community of Yermo. Figure 1-2 shows the existing major uses in the vicinity.

1.2 Purpose and Need for Action

BLM's purpose for the Proposed Action is to consider SCE's application under Title V of the Federal Land Policy and Management Act (FLPMA) (43 U.S. Code [USC] 1761) for authorization of a ROW on BLM lands, consistent with the FLPMA, BLM ROW regulations, and other applicable federal laws. The ROW application is to construct, operate, and maintain an extension of the Remote 33 kV overhead distribution circuit to a communication facility. BLM will decide whether to approve, approve with modification, or deny issuance of the ROW authorization to SCE (applicant) for the distribution line on public lands.

1.3 Connected Actions

Connected actions are those actions that are closely related and should be discussed in the same NEPA document based on the requirements outlined in 40 CFR 1508.25(a) (1). Actions are connected if they trigger other actions that may require an EIS, cannot or will not proceed unless other actions are taken previously or simultaneously, or are interdependent parts of a larger action (40 CFR 1508.25(a)(1)(i, ii, iii)). The Proposed Action is being voluntarily undertaken by the applicant to construct a new extension of an existing distribution line to provide permanent power to an existing communications facility. There are no related actions or activities proposed by the applicant that are necessary to complete the Proposed Action, and it is not an interdependent part of a larger action. Likewise, the Proposed Action would not trigger any other actions requiring an EIS. Consequently, BLM has determined that there are no connected actions as defined under 40 CFR 1508.25(a) (1).

1.4 Conformance

The Proposed Action is located in the West Mojave Desert Planning Area of the California Desert Conservation Area (CDCA) Plan.

BLM recently prepared a Land Use Plan Amendment (BLM 2016) to the CDCA in September 2016 as part of the Desert Renewable Energy Conservation Plan (DRECP). The DRECP was developed as an interagency plan by the BLM, the U.S. Fish and Wildlife Service (USFWS), the California Energy Commission, and the California Department of Fish and Wildlife (CDFW), collectively known as the Renewable Energy Action Team (REAT or REAT Agencies).

The DRECP Land Use Plan Amendment (LUPA) integrates renewable energy and resource conservation with other existing uses on BLM-managed land within the LUPA Decision Area, but does not amend any BLM land use plans for areas outside the DRECP boundary. The LUPA includes plan decisions necessary to adopt a conservation strategy and a streamlined process for the permitting of renewable energy and transmission development on BLM-managed lands, while integrating other uses and resources. This is achieved through the designation of land use allocations for Ecological and Cultural Conservation, Recreation, and Development, and adopting Conservation Management Actions (CMAs) for resources throughout the LUPA Decision Area. At the broadest level, the LUPA includes the following components:

- Development Focus Areas (DFAs)

- Variance Process Lands (VPLs)
- General Public Lands (GPLs)
- BLM Conservation Areas
 - National Landscape Conservation System (NLCS, CDNCL, or NCL)
 - Wild and Scenic Rivers
 - National Scenic and Historic Trails
 - Areas of Critical Environmental Concern (ACECs)
 - Wildlife Allocations
- BLM Recreation Areas
 - Special Recreation Management Areas
 - Extensive Recreation Management Areas

The proposed utility corridor in which the project would be located is within two types of land use areas: General Public Lands and BLM Conservation Areas. Within the BLM Conservation Areas designation, the project only occurs within one ACEC: Superior-Cronese. At the time of preparation of this EA, the ground disturbance condition of the Superior-Cronese ACEC has been identified as above its designated cap. As noted in Environmental Protection Measure BIO-16 described in Section 2.1.14, *Environmental Protection Measures*, the project would comply with all disturbance caps and compensatory mitigation requirements required as part of the DRECP.

BLM issued a Record of Determination (ROD) on the DRECP LUPA/Final EIS on September 14, 2016. The DRECP ROD includes a series of CMAs of which projects proposed to be built within the DRECP area must comply. The CMAs cover the following resources:

- Biological resources
- Air resources
- Climate change and adaption
- Comprehensive trails and travel management
- Cultural resources and tribal interest
- Lands and realty
- Livestock grazing
- Minerals
- Paleontology
- Recreation and visitor services
- Soil, water, and water-dependent resources
- Special vegetation features
- Vegetation
- Visual resources management

- Wild horses and burros
- Wilderness characteristics

Land use plan decisions for public lands fall into two categories: desired outcomes (goals and objectives) and allowable uses (including restricted or prohibited) and actions anticipated to achieve desired outcomes (BLM 2005). In the DRECP LUPA, CMAs represent those management actions and allowable uses.

In order to determine consistency with the CMAs under the DRECP LUPA, the Proposed Action was evaluated for applicability and consistency with each CMA (Appendix A). The findings of this evaluation determined that, with implementation of the environmental protection measures described in Chapter 2 of this EA, the Proposed Action would not conflict with provisions of the DRECP LUPA.

1.5 Scoping and Public Involvement and Issues

Based on input from internal scoping, BLM selected specific issues for further analysis and eliminated others from evaluation.

Table 1-1 summarizes the environmental resources that have been considered but dismissed from detailed analysis in this EA. A brief rationale for dismissing specific topics from further consideration is provided for each topic not considered because they are either not present in the project area or no measurable impacts would occur.

Table 1-1. Environmental Issues Analyzed or Dismissed

Resource	Detailed Analysis in EA (Yes/No)	Rationale
The Natural Environment		
Biological Resources	Yes	This resource is analyzed in the EA. See Section 3.1.
Geology and Soils	Yes	This resource is analyzed in the EA. See Section 3.2.
Minerals	No	The Proposed Action would traverse the western side of Calico Mountain to Calico Peak. No mineral resource recovery activities currently take place in the project area or would be adversely affected by the Proposed Action.
Paleontology	Yes	This resource is analyzed in the EA. See Section 3.3.
Water Resources	Yes	This resource is analyzed in the EA. See Section 3.4.
The Built Environment		
Agriculture	No	No important farmlands designated by the California Department of Conservation occur within the project vicinity; therefore, none would be affected by the Proposed Action.
Air Quality	Yes	This resource is analyzed in the EA. See Section 3.5.
Cultural Resources	Yes	This resource is analyzed in the EA. See Section 3.6.
Greenhouse Gases	Yes	This resource is analyzed in the EA. See Section 3.7.

Resource	Detailed Analysis in EA (Yes/No)	Rationale
Hazards	No	The Proposed Action would comply with all applicable laws and regulations related to hazardous materials and would not affect any hazardous materials sites in the project area. Furthermore, the Proposed Action would implement a Hazardous Substance Control and Emergency Response Plan to ensure accidental releases and upset conditions are minimized.
Land Use	Yes	This resource is analyzed in the EA. See Section 3.8.
Noise	No	No adverse effects from construction operations are anticipated because noise-generating operations involving the use of heavy equipment are expected to occur between the hours of 7:00 a.m. and 7:00 when construction noise is exempt from County noise limits, and because of the large distance (over 3 miles) between the proposed construction activities and the nearest development.
Population & Housing	No	The Proposed Action involves extending and constructing a new overhead distribution circuit and would not have any effect on local or regional population or housing.
Public Services & Recreation	No	The Proposed Action involves extending and constructing a new overhead distribution circuit and would not create any new demand for or otherwise affect public services and recreation.
Socioeconomics & Environmental Justice	No	Construction of the Proposed Action would be conducted by existing SCE employees for a temporary period of up to 18 weeks and require up to 15 workers at any given time. Employment rates in San Bernardino are not anticipated to change as a result of the Proposed Action. Furthermore, the Proposed Action is not in an area where minority or low-income groups would be disproportionately affected. No further analysis is required.
Transportation	No	No roads would be closed during construction or maintenance activities as part of the Proposed Action. No further analysis is required.
Utilities & Energy Use	No	The Proposed Action would deliver a 33 kV-distribution line to a single communication facility. This is a standard distribution voltage and would not result in the generation of significantly more energy resulting in adverse effects on local utilities. No further analysis is required.
Visual Resources	Yes	This resource is analyzed in the EA. See Section 3.9.

1.6 Discretionary Actions and Regulatory Permits

The majority of the Proposed Action would be located on lands administered by the U.S. Department of the Interior, BLM Barstow Field Office, as well as DOD lands. Federal and state agencies have been consulted during preparation of the various documents for the project. Table 1-2 summarizes the federal and state agencies with potential jurisdiction over one or more parts of the Proposed Action.

Table 1-2. State and Federal Agencies with Potential Jurisdiction over the Proposed Action

Agency	Jurisdiction/Consultation Trigger	Permit or Consultation
BLM	Construction on lands administered by BLM	Right-of-Way Grant
DOD	Construction on lands administered by DOD	Right-of-Way Grant
U.S. Fish and Wildlife Service	<i>Take</i> of a federally listed species	Incidental Take Statement
State Historic Preservation Office	Consultation with lead federal agency regarding resource significance and impacts on historic properties (significant cultural resources)	Determinations of resource eligibility and Finding of Effect
Caltrans	Activities that encroach on Caltrans' right-of-way	Encroachment Permit

Chapter 2

Proposed Action and Alternatives

2.1 Proposed Action

The Proposed Action involves constructing an extension of the Remote 33 kV overhead distribution line from Fort Irwin Road east to an existing communication facility at the top of Calico Peak in the Calico Mountains. Construction of the Proposed Action would involve installing 81 new single wood poles, 13 anchors, and 25 down guys, and removing 1 existing wood pole. Poles would range in height from 45 to 50 feet and have single- to multiple-arm configurations, depending on the engineering and equipment specifications for individual locations. Other materials would include conductors, insulators, transformers (when necessary), avian hoods (to protect against accidental electrocutions), guy wires, and anchors. All engineering, designs, and materials would be in accordance with SCE Distribution design standards and compliant with all applicable California Public Utilities Commission (CPUC) General Orders and Regulations. All project engineering and designs would meet CPUC General Order 95 clearance requirements related to temperature, wind, voltage, span, and structure heights.

Typical structure configurations are provided in Appendix B. Because some parameters, such as heights of poles, can vary with the engineering needs at specific locations, the standard range of dimensions is noted in Appendix B.

2.1.1 Components On and Off Public Land

Table 2-1 summarizes the land ownership by project component. No future components are planned beyond those already described. No new communications facilities are proposed as part of the Proposed Action.

Table 2-1. Land Ownership by Project Component

Component	DOD	BLM
Install New Pole	27 poles	54 poles
Install Slab Box	–	1 box
Remove Pole	1 pole	–
Underground Trench*	-	15 x 3 x 4 feet

* Trench is necessary to install the underground conduit starting from Pole No. 4823684E, continuing to slab box, and connecting to the communication tower.

2.1.2 Substations

The existing Remote 33 kV circuit connects to the Barstow Substation located in Barstow, California. This substation has a primary voltage of 33 kV and several secondary voltage connections including 12 kV, 4 kV, and 2.4 kV. No modifications to the Barstow Substation would be required as a result of the Proposed Action.

2.1.3 Construction Activities and Process

Construction of the project would entail installing 81 new single wood poles and 13 anchors and 25 down guys, and removing 1 existing wood pole. Ground-disturbing activities would consist of mechanically excavating holes for new poles using an auger. In areas inaccessible by vehicle, crews would travel on foot to reach work sites and would use pneumatic tools such as a gas powered auger or shovel to manually excavate holes for new poles. Holes would measure approximately 3 feet in diameter by approximately 6 to 10 feet deep for the installation of poles. Minor grade leveling with hand tools would occur for installation of new ground anchors at selected poles and installation of the slab box. The new poles would be trucked or helicoptered in from the staging area and set either manually, by truck, or by helicopter, dependent on access. The area of soil disturbance would be limited to a radius of 5 to 10 feet around the poles, and light disturbance (primarily overland vehicle travel) would be present within a general 25-foot radius around each pole. The existing pole on the west side of Fort Irwin Road would be pulled utilizing a boom truck, and the excavated hole would be backfilled with excavated soil. The project would not require import or export of soil. The excavated soil from the new pole locations would be spread around the work areas.

Construction would be undertaken pole by pole. Holes for the poles would be augured one at a time (per crew) and then new poles would be set in place. Anchors and guy wires would be installed as specified and tensioned to the appropriate level. The new conductor would be strung in five phases: Phase 1: from Pole No. 4859863E to Pole No. 4859851E; Phase 2: from Pole No. 4859863E to Pole No. 4859874E; Phase 3: from Pole No. 4859890E to Pole No. 4859874E; Phase 4: from Pole No. 4859890E to Pole No. 4859905E; and Phase 5: from Pole No. 4827683E to Pole No. 4859905E. The conductor would be strung in one of two ways: (1) a helicopter would be used to connect a rope to each pole, pulling trucks would be set at either end of each phase with the conductor on reels, the conductor would be attached to the rope on one end, and then the rope would be pulled to bring the conductor to the poles; or (2) a helicopter would fly the conductor in and attach it directly to the poles. Once the new conductor is in place, it would be connected to insulators on the cross-arms, final electrical connections would be made, and the line would be energized. It is estimated construction could take up to 14 to 18 weeks to complete depending on construction conditions.

2.1.4 Permanent and Temporary Access

Temporary access to facilities would involve the use of surface streets and existing dirt and two-track roads to the greatest extent possible. Where no established path exists, crews propose to either drive overland in areas where terrain is flat enough for vehicle access, or travel on foot to reach work sites and use helicopters to deliver and set the wood poles. Overland travel would avoid vegetation (shrubs) to the extent possible; however, some shrubs would likely be crushed. No blading or grading of any new access roads would occur, and crushed vegetation would be left in place.

Permanent access to facilities during operations and maintenance activities would utilize the same access routes.

2.1.5 Temporary Use Areas

The Barstow-Daggett Airport would be used for helicopter staging and fueling (Figure 2-1). Three additional staging and storage areas would be located along the line extension route near Pole Nos. 4859863E, 4859879E, and 4823683E (Figures 1-3b, 1-3d, and 1-3i). Temporary work areas necessary for construction would be no larger than a 25-foot radius around each pole.

2.1.6 Work Force

One crew of four to five workers can install one to three poles per day depending on construction conditions. One crew made up of four to five workers would support the overhead wood pole line installation. Approximately two to three crews would typically be working on the project at any one time. Where vehicle access exists, three vehicles per crew are usually required for installation: one drill rig with pole dolly trailer, one bucket truck with cable dolly, and one chase/pick-up truck with water-buffalo trailer. Where no vehicle access exists, crews would hike to the locations and a helicopter would be used to deliver a compressor, jack hammer, and poles to the work site. A crew of four to five workers is required to perform the overhead installation, typically requiring a helicopter and two pulling trucks. A crew of two to five workers with one vehicle is required to install the underground electrical cable and transformer.

In addition to the crews, a project supervisor would monitor the construction work sites as necessary.

2.1.7 Safety Requirements

The following measures would be implemented during project construction to ensure a safe work environment.

- A Hazardous Substance Control and Emergency Response Plan shall be kept on site (or in vehicles).
- Hazardous material spill kits shall be maintained at all construction sites for small spills. Each kit shall include oil-absorbent material and tarps to be used to contain and control any minor releases. Emergency spill supplies and equipment shall be kept adjacent to all work areas, and staging areas and shall be clearly marked.
- All field personnel will be required to complete a training program prior to the start of construction that will emphasize site-specific physical conditions to improve hazard prevention (e.g., identification of potentially hazardous substances). SCE or its designated contractor will maintain a list of names of all construction personnel who have completed the training program.
- During excavation work, the construction contractor shall observe the exposed soil for visual evidence of contamination.

2.1.8 Traffic Control

The following measures would be implemented during project construction to ensure that there are no impacts on traffic.

- Road closures will be avoided. If needed, temporary traffic control using flaggers will be implemented.
- Encroachment permits will be obtained prior to construction from Caltrans, and all conditions of those permits will be implemented.

2.1.9 Industrial Wastes and Toxic Substances

An existing SCE Hazardous Materials Management Plan and an associated emergency response plan and inventory will be utilized by the construction contractors' certified personnel.

Petroleum products such as gasoline, diesel fuel, crankcase oil, lubricants, and cleaning solvents would be used during construction to fuel, lubricate, and clean vehicles and equipment, and would be transported in specialty trucks or in other approved containers. When not in use, hazardous materials would be properly stored to prevent drainage or accidents. These materials would not be drained onto the ground or into drainage areas; tarps or catch basins would be laid down during any refueling or pouring of oil or other fluids.

Totally enclosed containment shall be provided for all hazardous waste. All construction waste, including trash and litter, garbage, other solid wastes, petroleum products, and other potentially hazardous materials, would be removed on a daily basis to a disposal facility authorized to accept such materials.

2.1.10 Operation and Maintenance

Most regular operations and maintenance activities described below for overhead facilities are performed from existing access roads with no ground disturbance. The exceptions would be aerial inspections, which are conducted from helicopters and fixed-wing aircraft, and wood pole testing and treatment, restringing conductors, and pole and anchor/guy wire replacement activities, which would utilize existing access roads and previously disturbed areas to the extent feasible, however, on occasion activities may be required in previously undisturbed areas. Frequency of maintenance varies in relation to the level of dirt, dust, bird activity, and other environmental factors present in a particular geographic area; the level of vandalism of facilities (e.g., gunshot insulators); the severity of storms (e.g., Santa Ana winds) and other natural disasters (e.g., fires, floods, and earthquakes) or accidents; and normal wear.

Regular inspection and maintenance of overhead facilities is crucial for maintaining uniform, adequate, safe, and reliable service. Regular inspection and maintenance activities are those that take place at scheduled intervals and as needed (both proactive and reactive); are conducted by air or from existing access roads, work areas, and trails; and do not involve ground or vegetation disturbance. The following types of routine maintenance activities are conducted.

Aerial Inspections

Aerial inspections are conducted from helicopters and fixed-wing aircraft. Transmission, telecommunication, and distribution line reconnaissance is performed to assess the condition of facilities. These patrols are conducted annually and on an as-needed basis to ensure continued worker and public safety and system reliability.

Routine Line Patrols

Routine line patrols generally are conducted from a patrol vehicle traveling on existing access roads or trails, but may also include staff walking into a location. Ground patrols of all equipment are required one time per year, but may occur more frequently based on system reliability and local conditions. These activities typically involve patrol personnel using light-duty vehicles to visually inspect structures, lines, hardware, and foundations. Conditions found and required maintenance items are identified and recorded during routine patrols. Minor repairs are sometimes completed immediately, but they are more often compiled and completed separately from the patrols for efficiency. In addition to inspection of towers and poles, the surrounding area is checked for tree clearances, brush and potential fire hazards, water or wind erosion, and slides or wind-caused dirt or sand piled over tower footings or on poles. Access roads are checked for water or wind erosion; rocks or slides that may block access; overhanging brush; trees that intrude into the roadway; and grass, weeds, or other combustible materials that may cause a fire hazard. No surface disturbance or off-road activity occurs during routine patrols. During winter and spring months, patrol vehicles may drive through small stream crossings or washes that contain flowing or ponded water on access roads or trails. Routine patrols would not disturb riparian (streamside) vegetation associated with stream banks.

Wood Pole Test and Treat (SCE Intrusive Pole Program)

Wood pole testing and treating is a necessary maintenance activity conducted to evaluate the condition of wood structures both above and below ground level. Poles exceeding 15–20 years of service are subjected to an intrusive inspection once every 5 years after the first intrusive inspection. As a result of these inspections, the structure's condition is rated and it may receive additional maintenance, such as an application of a preservative wrap. Intrusive inspections require the temporary removal of soil around the base of the pole, usually to a maximum depth of 20 inches, to check for signs of deterioration. Existing roads and trails are utilized for access to poles. For impact prevention, all soil removed for intrusive inspections would be reinstalled and compacted at completion of the testing.

Insulator and Hardware Maintenance

Maintenance and replacement of insulators and hardware is performed as needed to maintain worker and public safety and circuit reliability. Existing roads and trails are utilized for access to towers and poles. Tools used to perform these activities, including various hand tools, ladders, ropes, and slings, are transported to and from the work location by line truck, utility truck, helicopter, or personnel on foot.

Restranging Conductors

In the future, the conductor may require restranging (replacement) to accommodate increased loading or higher voltages or to repair damage. Restranging conductors is classified as being of low environmental risk if the wire-stringing activities are limited to and contained within existing roads and tower locations, and if the conductor does not come in contact with any vegetation as it is pulled to its destination. Although restranging conductors is typically accomplished from trucks and equipment parked on existing access roads and work areas, some pulling site locations may be required in previously undisturbed areas, and conductors may affect existing vegetation during restranging.

Pole and Tower Repair

Repair activities on poles and towers are generally executed by personnel climbing the structures and performed from the structure itself. The crews utilize a vehicle to transport tools, hardware, and personnel to the site; the vehicle remains on the existing access roads and in previously disturbed designated work areas. In some cases, poles and towers do not have existing access roads and are accessed on foot or by helicopter. Types of vehicles utilized for repairs ranges from light-duty vehicles to heavy construction equipment.

Pole Replacement

Replacement of wooden, composite, concrete, or tubular steel poles is conducted from existing access roads and designated work areas whenever it is feasible and safe to do so. Some laydown areas may be in previously undisturbed areas and may result in ground and/or vegetation disturbance, though attempts would be made to utilize previously disturbed areas to the greatest extent possible. Pole replacement is accomplished using a backhoe, crane, bucket truck, heavy line truck, and/or helicopter, depending on the location and local conditions. New replacement poles are brought in by truck or helicopter. In some cases, roads may be created or reopened to remove and replace an existing pole. If work is required in previously undisturbed areas, SCE will identify these areas when future operation and maintenance activities emerge, and will coordinate and obtain approval from the appropriate federal land management agency.

Anchor/Guy Wire Replacement

Routine anchor/guy wire replacements are necessary when a structure or hardware modification requires additional support to accommodate increased loading or higher voltages, to repair damage, or to maintain worker and public safety. Existing roads and trails are typically utilized for access to anchor locations, resulting in minimal ground disturbance for installation of the anchor.

2.1.11 Emergency Repairs

While most activities can be scheduled reasonably well in advance, emergency repairs may be needed at any time. Such repairs may include replacement of downed poles, transmission towers, or lines or restringing of conductors. An emergency is also considered in instances where a system failure “breakdown” has occurred as a result of multiple towers, poles, and conductors being down. Arresting the damage and cascading failure of the facilities involved in the breakdown requires immediate attention. SCE conducts emergency repairs in response to emergency situations such as high winds, storms, wildfires, other natural disasters (e.g., slumps, slides, surface fault ruptures, erosion, and major subsidence), and accidents. In these situations, SCE would do what is necessary to bring the line back in service. SCE would notify BLM of commencement of any emergency repairs as soon as is reasonable. The notice would include a description of the work, location of the facilities, and cause of the emergency, if known. In addition, if the emergency repair activity is located within a jurisdictional wetland or waterway, SCE would notify the appropriate federal or state regulatory agencies in accordance with current regulatory requirements. BLM and SCE would work together to agree upon habitat restoration needs, if any, after the emergency.

A description of emergency repairs is described in SCE’s internal system manuals. The manuals define the utility’s obligation to inspect and repair safety hazards. Safety hazards fall into one of

three categories (Priority 1—Immediate Safety Risk; Priority 2—Variable Safety or Reliability Risk; and Priority 3—Acceptable). A Priority 1—Immediate Safety Risk is a condition that presents a hazard to workers or the public or may cause a system failure. An immediate safety risk would include significant threat to life or property including, but not limited to, the ignition of a wildland or structure fire. Priority 1 situations require that SCE take action immediately, either by fully repairing the condition or by temporarily repairing and reclassifying the condition to a lower priority. The SCE internal system manuals conform to CPUC General Order 95, Rule 18A (Reporting and Resolution of Safety Hazards Discovered by Utilities) and are compliant with the General Order 165 Inspection Program (Inspection and Maintenance Standards) and all Federal Energy Regulatory Commission standards.

2.1.12 Fire Prevention

SCE maintains a Fire Plan for its facilities on public lands. The plan describes the measures that SCE has in place to mitigate the threat of fire ignitions. The Fire Plan outlines specific maintenance and operational practices that are instituted under a number of circumstances as a matter of policy and/or procedure.

2.1.13 Termination and Restoration

The Remote 33 kV extension line would remain in place indefinitely to serve the communication facility. Subsequent improvements or upgrades would likely be necessary at some point in the future, and would be subject to future ROW and permitting approvals. Although termination of the project is not anticipated, removal of all structures, revegetation (if necessary), and closure and rehabilitation of roads would be completed in consultation with BLM and DOD if the ROW were not to be approved in the future and removal of the project becomes necessary.

2.1.14 Environmental Protection Measures

Resource-specific environmental protection measures that would be implemented by the applicant are listed below. Included in the list of measures are LUPA-wide protective measures that are implemented in all covered projects.

Biological Resources

General Biological Measures

- **BIO-1: Implement measures to control noxious weeds.** All vehicles and ground-disturbing equipment shall be pressure washed prior to entering BLM and DOD lands to avoid the spread of noxious weeds.
- **BIO-2: Remove tracks in areas of overland travel.** Where appropriate to prevent and discourage unauthorized off highway vehicle (OHV) use, SCE shall remove vehicle tracks created by the Project.

Any disturbance to cactus, yucca, and creosote rings greater than 5 meters in diameter shall be avoided to the greatest extent practicable. Any cactus or yucca that cannot be avoided will be salvaged prior to disturbance using the most effective BLM transplant protocols. To the greatest

extent practicable, the cactus will be replanted to where they were collected following construction activities.

- **BIO-3: Incorporate raptor-safe features into facility design.** SCE shall construct the new 33 kV power line according to the practices described in the publication *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Avian Power line Interaction Committee 2006).
- **BIO-4: Conduct preconstruction nesting bird surveys.** During the nesting season (February 1 to August 31 and as early as January 1 for raptors), preconstruction nesting bird surveys shall be conducted by a qualified avian biologist prior to the initiation of construction. Nesting bird surveys shall be conducted within 7 days prior to construction. Appropriate no-activity buffers shall be established by a qualified biologist around active nests (generally 250 feet for passerines and 500 feet for most raptors) until it has been determined by a qualified biologist that the young have fledged or the nest has failed.
- **BIO-5: Conduct golden eagle and prairie falcon nest surveys.** Should the use of helicopters occur during the nesting season for golden eagles or prairie falcons (January 1 through mid-September), a biologist who is qualified to conduct golden eagle surveys will conduct nest surveys for golden eagles (concurrent with prairie falcon nest surveys). A raptor biologist must meet the qualifications described in section VIII Observer qualifications in the Interim Golden Eagle Inventory and Monitoring Protocols. Surveys may proceed after approval of the qualified raptor biologist by the authorized officer.

Nest surveys shall include all possible nest sites within 1 mile of the project. Nest surveys shall be conducted according to the most recent version of the Interim Golden Eagle Inventory and Monitoring Protocols; and Other Recommendations produced by the USFWS. SCE shall submit the results of the surveys to BLM. Construction may proceed only after coordination with the BLM following the results of the surveys.

- **BIO-6: Avoid active golden eagle and prairie falcon nests.** Project activities must stay at least 1.0 mile from occupied golden eagle and prairie falcon nests unless the line of sight from the edge of construction is obscured. No construction within the line of sight and or within 1.0 mile of nest sites would be allowed during the nesting season.
- **BIO-7: Avoid attracting predators and nuisance species.** To avoid attracting predators and nuisance species, the project shall be kept clear of debris, where possible. All food-related trash items shall be enclosed in sealed containers and regularly removed from the project.
- **BIO-8: Cover trenches and holes.** All trenches and holes shall be completely and securely covered by end of the work day. Prior to the start of work on the next day, the approved biologist shall inspect any holes and trenches that have been covered to determine if wildlife have fallen in overnight. If non-listed wildlife is discovered within the hole or trench, the approved biologist will remove and relocate the individual out of the project limits. If a listed species is discovered within a hole or trench, the applicant will allow the animal to escape out of harm's way. If the animal is not able to escape in its own, the applicant shall stop work within the immediate vicinity and notify the BLM and the appropriate resources agency (e.g., USFWS or CDFW) before construction is allowed to proceed.
- **BIO-9: Limiting the use of water.** Only the minimum application of water may be used for dust abatement.

- **BIO-10: Conduct desert kit fox preconstruction surveys.** All potential desert kit fox burrows shall be assessed for presence/absence of desert kit fox by a qualified biologist. Active desert kit fox burrows within the disturbance area shall be passively relocated after a qualified biologist has determined that there are no pups or that pups have been weaned. Passive relocation may be conducted after approval from CDFW. Desert kit fox dens/burrows within 200 feet of construction activities shall be avoided.
- **BIO-11: Conduct burrowing owl preconstruction survey.** Prior to any ground disturbance a burrowing owl survey shall be conducted by a qualified biologist at all work sites where suitable burrowing owl habitat occurs. The protocols shall follow the guidelines described in the Burrowing Owl Survey Protocol and Mitigation Guidelines 1993.
- **BIO-12: Implement burrowing owl protection measures.** If western burrowing owl is observed during the burrowing owl preconstruction surveys, passive relocation, if necessary, of western burrowing owl would occur according to the guidelines described in the Burrowing Owl Survey and Mitigation (1993) and in direct coordination with CDFW. Passive relocation would only occur outside the western burrowing owl nesting season (nesting season is approximately February 15 to August 31) and only after a qualified biologist has ensured that no nestlings are present and that nesting has not begun. If burrowing owls are present during the nesting season, the designated biologist will establish a setback of 656 feet (200 meters) (or a smaller distance determined by the designated biologist in coordination with BLM/Fort Irwin, depending on location, based on site conditions) to sufficiently minimize disturbance during the nesting period.
- **BIO-13: Conduct Mohave ground squirrel preconstruction survey.** Mitigation requirements to avoid or minimize permanent direct impacts on the Mohave ground squirrel will include onsite monitoring of ground disturbance activities by a qualified biologist in all areas with the potential to support the Mohave ground squirrel. The approved biologist will conduct a preconstruction survey of the project area for the presence of suitable Mohave ground squirrel burrows prior to initiation of ground-disturbing activities. Preconstruction surveys for Mohave ground squirrels will be conducted no later than 24 hours prior to the commencement of disturbance. If a Mohave ground squirrel is observed in a particular work area, the designated biologist shall monitor the location until he/she deems it is safe to resume work. If Mohave ground squirrel is encountered and identified by a qualified biologist, the BLM and CDFW shall be notified and consulted for potential further action.
- **BIO-14: Pay raven management fee:** The BLM will assess a regional raven management fee of \$105 per acre. The fee will be based on a right-of-way width of 25 feet and a length of 4.5 miles. The raven management fee will be \$1,431.68 and SCE will contribute this amount to the raven management fund. Additionally, SCE will install anti-perching devices on the new pole structures that will reduce the likelihood of ravens perching or nesting on those pole structures.
- **BIO-15: Restrict pets.** Domestic pets are prohibited on site. This prohibition does not apply to the use of domestic animals (e.g., dogs) that may be used to aid in official and approved monitoring procedures/protocols, or service animals (dogs) under Title II and Title III of the American with Disabilities Act.
- **BIO-16: Comply with disturbance caps and compensatory mitigation requirements in the DRECP.** SCE shall fulfill compensation requirements for the effects of the Calico Peak Power Project within 12 months of the onset of construction activities. Compensation shall be based on the following ratios: 5:1 within critical habitat and 1:1 outside critical habitat. Compensation

requirements may be fulfilled through acquisition or restoration land. SCE may proceed with the implementation of their compensation strategy upon approval from the Authorized Officer.

Desert Tortoise Measures

- **DT-1:** The project proponent shall designate a field contact representative (FCR) who will be responsible for overseeing compliance with protective stipulations for the desert tortoise and for coordination on compliance with the BLM. The FCR must be on site during all project activities. The FCR shall have the authority to halt all project activities that are in violation of the stipulations. The FCR shall have a copy of all stipulations when work is being conducted on the site. The FCR may be a crew chief or field supervisor, a project manager, any other employee of the project proponent, or a contracted biologist.
- **DT-2:** All employees of the project proponent who work on site shall participate in an approved tortoise education program prior to initiation of field activities. The project proponent is responsible for ensuring that the education program is developed and presented prior to conducting activities. New employees shall receive formal training prior to working on-site. The employee education program must be received, reviewed, and approved by the BLM Resource Area Office at least 15 days prior to the presentation of the program. The program may consist of a class presented by a qualified biologist (BLM or contracted) or a video. The program shall cover the following topics at a minimum:
 - distribution of the desert tortoise,
 - general behavior and ecology of the tortoise,
 - sensitivity to human activities,
 - legal protection,
 - penalties for violation of Federal and State laws,
 - reporting requirements, and
 - project protective mitigation measures.
- **DT-3:** SCE shall designate a lead biologist to oversee all biological monitors. The lead biologist shall be able to demonstrate that he/she has sufficient knowledge and experience to recognize the range of potential effects of the project, and show extensive experience in implementing protective measures on projects. SCE shall also have a qualified monitor present for each active worksite who will oversee preconstruction surveys, implementation of avoidance measures and completing a post-construction report. SCE shall forward the resume of the lead monitor to the Barstow Field office for review. Construction may not start until the lead monitor has been approved. The lead monitor may approve all qualified monitors to work on the project.
- **DT-4:** The approved biologist shall conduct a preconstruction survey of the project area prior to initiation of ground-disturbing activities. Preconstruction surveys for desert tortoise shall begin no earlier than 14 days prior to construction, and end no earlier than 24 hours prior to the commencement of disturbance. If a tortoise is observed in a particular work area, the tortoise will first be encouraged to move out of the work area on its own. If the tortoise does not move out of the work area, the approved biologist will move the tortoise to a suitable location outside of the work area. The approved biologist shall follow the methods described in the latest version of *Desert Tortoise Field Manual* produced by the USFWS when handling the tortoise.

- **DT-5:** The approved biologist shall be present during all construction activities that have the potential to disturb soil, animals, or plants.
- **DT-6:** Where appropriate, monitors shall flag the boundaries of areas where activities need to be restricted to protect native plants and wildlife, or special-status species. These restricted areas would be monitored to ensure their protection during construction. If non-listed sensitive resources are found within the project, the monitor will relocate the individual out of project limits.
- **DT-7:** To avoid attracting predators and nuisance species, the project shall be clear of debris, where possible. All food-related trash items shall be enclosed in sealed containers and regularly removed from the project site.
- **DT-8:** All vehicles and ground-disturbing equipment shall be pressure washed prior to entering BLM lands to avoid the spread of noxious weeds. Furthermore, all vehicles shall be limited to speeds of 15 mph when driving within the proposed action areas, and crews will check for desert tortoise underneath parked vehicles/equipment before they are moved.
- **DT-9:** Anyone who operates a motor vehicle or heavy equipment while in tortoise habitat shall check for desert tortoise underneath parked vehicles/equipment. If a tortoise is found underneath a parked vehicle the vehicle operator shall wait for the tortoise to move away from the vehicle on its own volition. If the tortoise does not move within 15 minutes a crew member or biologist may direct the vehicle away from the tortoise without harming it. A biological monitor shall be notified immediately if a vehicle has been moved from a sedentary tortoise.
- **DT-10:** Where access roads are not available crew(s) shall drive cross-country to work sites. Blading, grubbing, or cutting of vegetation is prohibited. Crews will maximize the use of existing access roads or disturbed/developed areas to stage materials and equipment. Disturbance of shrubs or other desert tortoise habitat will be limited to the thresholds identified in the biological assessment. When cross-country travel is necessary SCE shall use the minimum number of vehicles to safely install poles. SCE will minimize when practical the use of passenger vehicles to access the pole sites in tortoise habitat. All trenches and holes will be completely and securely covered by end of the work day. Prior to the start of work on the next day, the designated biologist shall inspect any holes and trenches that have been covered to determine if wildlife have fallen in overnight. If wildlife is trapped and cannot be safely removed, crews will contact the qualified biologist.
- **DT-11:** Prior to any project vehicle driving off established dirt roads in suitable desert tortoise habitat, all access routes to work areas shall be surveyed by a qualified biologist to determine if desert tortoises are present. The qualified biologist shall survey each route by walking. The number of qualified biologists needed to survey a route or work location shall be the minimum needed to visually account for 100 percent of the footprint of the route or work location plus a 5-meter buffer on each side. All live desert tortoises will be moved out of harm's way as needed.
- **DT-12:** Where appropriate to prevent and discourage unauthorized OHV use, SCE will remove tracks, if created by project activities, by raking or other means, following construction.
- **DT-13:** Upon locating a dead or injured tortoise, the approved biologist shall inform the BLM immediately. The BLM must then notify the appropriate field office of the USFWS by telephone within 3 days. Written notification must be made within 5 days of the finding. The information provided must include the date and time of the finding or incident, location of the injured or dead animal, a photograph, and cause of death if known.

- **DT-14:** Within 90 days of completion of all construction activities the FCR and approved biologist shall submit a post-construction report. The report shall include at a minimum the following: photographs before and after the project, the number of tortoises encountered, any tortoise injured or killed, and the number of acres disturbed.
- **DT-15:** SCE shall discourage raven nesting and perching on all poles, cross arms, and transformers associated with the Calico Peak Utility Line Pole Project. Any anti nesting or perching devices shall be approved by the Barstow Field Office of BLM prior to their installation.

Paleontological Resources

- **PALEO-1: Conduct paleontological monitoring.** Because Pleistocene sediments are present in the project area, spot-check paleontological monitoring will be conducted in those areas during excavations to reduce adverse project effects below the level of significance pursuant to NEPA. Areas of Pleistocene age sediments will be demarcated as Environmentally Sensitive Areas, which will be marked on construction plans prior to commencing work. In areas where Pleistocene age sediments were not observed, spot-check monitoring will be conducted, as these younger sediments may harbor older sediments shallowly below. Following initial ground disturbance, the monitor will have the authority to institute full-time or reduced monitoring, based on sediment observations.
- **PALEO-2: Stop work in the event of discovering paleontological resources.** In the event that paleontological resources are discovered during earthmoving activities, work shall be halted immediately and the appropriate party should be notified based on whether or not a paleontological monitor is present on site. The paleontological consultant in consultation with the BLM Authorized Officer shall assess the discovery and determine further mitigation measures as appropriate.

Water Resources

- **WQ-1: Prepare and implement a Stormwater Pollution Prevention Plan.** The project proponent will prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) to address all construction-related activities, equipment, and materials that have the potential to affect water quality during construction. The SWPPP will identify the sources of pollutants that may affect the quality of stormwater and include best management practices (BMPs) to control the pollutants—such as sediment control, erosion control, construction materials, and waste management—and other non-stormwater BMPs. All construction site BMPs must be designed to control and minimize the impacts of construction and construction-related activities, material, and pollutants on the watershed.
- **WQ-2: Delineate the limits of work areas.** Per the findings and recommendations of the 2016 Jurisdictional Delineation Report and the 2016 Calico Peak Utility 33 kV Pole Line Project Waters Impact Assessment prepared by ICF (ICF 2016a, 2016b), all work areas will avoid impacts to jurisdictional waters. Due to the proximity of permanent and temporary impact footprints to jurisdictional waters, the limits of the work areas shall be delineated by flags or fencing prior to construction. Additionally, a qualified biologist shall monitor all work that occurs near a jurisdictional water to ensure avoidance.
- **WQ-3: Implement best management practices to minimize potential impacts on water resources.**

- Equipment/vehicles must be inspected for leaks (e.g., fuel, oil, grease, hydraulic fluids) prior to crossing or entering drainages. Leaks must be repaired and cleaned prior to entering drainages.
- Construction materials (e.g., construction fill, gravel, concrete) or excavated materials are not allowed to be stored/stockpiled/staged within drainage feature(s).
- Equipment/vehicles may not be fueled or serviced/repaired within any drainage feature, or where any potential spills could reasonably be expected to enter a drainage feature.
- Stockpiling of fuels, lubricants, or other materials shall be conducted a minimum of 50 feet outside of drainage features.
- Vehicles/equipment are not allowed to be parked overnight within drainage features. If overnight parking is required, vehicles/equipment must be located a minimum of 50 feet outside of drainage features and approved BMPs (e.g., oil drip pans, plastic sheeting) are required.
- Certified weed-free mulch, straw, hay bales, or equivalent fabricated materials will be used if sediment barriers are necessary.

Cultural Resources

- **CUL-1: Conduct additional cultural resource studies if study area changes.** If revisions to the project design result in the potential for project-related ground disturbance to occur outside of the cultural resources study area, a cultural resources inventory will be performed in these areas prior to project implementation. The results of the inventory will be reported in a supplemental technical report to BLM.
- **CUL-2: Stop work if potentially significant cultural materials are encountered.** If buried cultural resources such as chipped or ground stone, midden soil, historic debris, or building foundations are discovered inadvertently during project-related ground disturbance, work will be temporarily halted within 100 feet of the discovery until BLM and SCE cultural resources staff are notified and a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with BLM and SCE.
- **CUL-3: Contact BLM cultural resources staff if human remains are encountered.** While no human remains were observed in the cultural resources study area, there is always the possibility that human remains or unmarked burials may be unearthed during construction. If an inadvertent discovery of human remains is made during project construction, the employee in charge must immediately notify BLM cultural resources staff by telephone and provide written confirmation of the discovery to BLM. Work must cease in the area of the discovery and all reasonable efforts must be made to protect the remains and any other cultural items associated with the human remains. Work may not resume until BLM provides notification that work may proceed.
- **CUL-4: BLM Protocol – Discovery of Human Remains in California.** All discovered human remains shall be treated with respect and dignity. California state law (California Health & Safety Code 7050.5) and federal law and regulations ([Archaeological Resources Protection Act (ARPA) 16 USC 470 & 43 CFR 7], [Native American Graves Protection & Repatriation Act (NAGPRA) 25 USC 3001 & 43 CFR 10] and [Public Lands, Interior 43 CFR 8365.1-7]) require a defined protocol

if human remains are discovered in the state of California regardless if the remains are modern or archaeological.

Upon discovery of human remains, all work within a minimum of 200 feet of the remains must cease immediately, nothing disturbed and the area secured. The County Coroner's Office of the county where the remains were located must be called. The Coroner has two working days to examine the remains after notification. The appropriate land manager/owner or the site shall also be called and informed of the discovery. If the remains are located on federal lands, federal land managers/federal law enforcement/federal archaeologist are to be informed as well because of complementary jurisdiction issues. It is very important that the suspected remains and the area around them remain undisturbed and the proper authorities called to the scene as soon as possible as it could be a crime scene. Disturbing human remains is against federal and state laws and there are criminal/civil penalties including fines and/or time in jail up to several years. In addition, all vehicles and equipment used in the commission of the crime may be forfeited. The Coroner will determine if the bones are historic/archaeological or a modern legal case.

Modern Remains

If the Coroner's Office determines the remains are of modern origin, the appropriate law enforcement officials will be called by the Coroner and will conduct the required procedures. Work will not resume until law enforcement has released the area.

Archaeological Remains

If the remains are determined to be archaeological in origin and there is no legal question, the protocol changes depending on whether the discovery site is located on federally or non-federally owned/managed lands.

Remains discovered on federally owned/managed lands

After the Coroner has determined the remains are archaeological or historic and there is no legal question, the appropriate Field Office Archaeologist must be called. The archaeologist will initiate the proper procedures under ARPA and/or NAGPRA. If the remains can be determined to be Native American, the steps as outlined in NAGPRA, 43 CFR 10.6 *Inadvertent discoveries*, must be followed.

Remains discovered on non-federally owned/managed lands

After the Coroner has determined the remains on non-federally owned/managed lands are archaeological and there is no legal question, the Coroner shall make recommendations concerning the treatment and disposition of the remains to the person responsible for the excavation, or to his or her authorized representative. If the Coroner believes the remains to be those of a Native American he/she shall contact by telephone within 24 hours, the California Native American Heritage Commission (NAHC). The NAHC will immediately notify the person it believes to be the most likely descendent of the remains. The most likely descendent has 48 hours to make recommendations to the land owner for treatment or disposition of the human remains. If the descendent does not make recommendations within 48 hours, the land owner shall reinter the remains in an area of the property secure from further disturbance. If the land owner does not accept the descendant's recommendations, the owner or the descendent may request mediation by the NAHC.

Resumption of activity. The activity that resulted in the discovery of human remains may resume at any time that a written, binding agreement is executed between the BLM, lineal descendants, and/or the federally recognized affiliated Indian Tribe(s) that adopts a recovery plan for the excavation or removal of the human remains, funerary objects, sacred objects, or objects of cultural patrimony following 43 CFR 10.3 (b) (1) of these regulations. The disposition of all human remains and NAGPRA items shall be carried out following 43 CFR 10.6.

Noise

NOI-1: Noise Controls. SCE will require contractors use noise controls (i.e., mufflers) on standard construction equipment during construction to reduce noise.

2.2 No Action Alternative

The No Action Alternative is a requirement of NEPA. It is also the only alternative that does not respond to the purpose and need for the action. This alternative represents the environmental baseline. Under the No Action Alternative, the Proposed Action would not be implemented and the distribution line would not be extended. A reliable power source would not be provided to the communication facility, and none of the potential impacts of the Proposed Action would occur.

2.3 Alternatives Considered But Eliminated from Further Analysis

As part of the NEPA process, BLM considered three alternatives to the Proposed Action. The following is a discussion of those alternatives that have been eliminated from detailed consideration in this EA.

2.3.1 Underground Utility Line Alternative

The Underground Utility Line Alternative would involve construction of an underground utility line that would connect the existing 33 kV distribution line from Fort Irwin Road to the existing communication facility. This alternative would follow the same alignment as the Proposed Action. Construction of the underground utility line would minimize potential effects on visual resources; however, it would require continuous trenching and excavation along the proposed ROW, which would result in greater detrimental effects on the environment due to extensive vegetation clearing and grading. This alternative would also result in greater air quality and noise impacts from construction than installation of a surface utility line. As such, the Underground Utility Line Alternative was rejected from further analysis as it is environmentally inferior to the Proposed Action.

2.3.2 Existing Access Roads Alignment Alternative

The Existing Access Roads Alignment Alternative would involve the installation of a surface utility line that would align with the existing dirt access roads along Doran Scenic Drive. A search for prime power conducted with the local power provider, SCE, determined that electrical power could only be

conveyed from the existing 33 kV distribution line that runs parallel to Fort Irwin Road, 5 miles to the west of Calico Peak. In order to follow the existing roads alignment, this alternative would span a greater distance and require significantly more utility poles and guy anchor points than the Proposed Action, and result in a non-uniform alignment. Due to greater surface disturbance and potential biological and water resources impacts, this alternative was rejected from further analysis as environmentally inferior to the Proposed Action.

2.3.3 Solar Electricity Generator Alternative

The Solar Electricity Generator Alternative would involve the replacement of the existing diesel generator at the existing communications facility on Calico Peak with a solar power system. Replacement of the existing diesel generator with solar-powered generators would still require frequent maintenance trips to Calico Peak and would provide a less reliable power source than permanent transmission through the proposed utility pole line. This alternative was rejected from further analysis as an unreliable alternative to the Proposed Action.

Chapter 3

Affected Environment and Environmental Effects

This chapter describes the existing environmental conditions within the vicinity of the Proposed Action for resources potentially affected by implementation of the alternatives discussed in Chapter 2. Information presented in this chapter represents baseline conditions and identifies potential impacts against which the Proposed Action and the No Action Alternative are evaluated.

Potentially affected resources include: biological resources, geology and soils, paleontological resources, water resources, air quality, cultural resources, greenhouse gas emissions, land use, and visual resources.

3.1 Biological Resources

This section describes the affected environment pertaining to biological resources and the potential environmental consequences that could result from implementation of the Proposed Action. Information in this section is summarized from the Biological Technical Report (ICF 2016a) prepared for the Proposed Action. This includes the results of a habitat assessment for special-status species, vegetation mapping efforts, noxious weed survey, a jurisdictional delineation, and focused surveys.

3.1.1 Affected Environment

The Proposed Action lies within typical basin and range topography for the Mojave Desert. Elevations at the project site vary from a low of approximately 3,035 feet above mean sea level, just east of Fort Irwin Road, to a high of approximately 4,450 feet above mean sea level, at the top of Calico Peak. Large alluvial fans occur to the west of Calico Peak, and along the western half of the project area.

The northwestern portion of the Proposed Action would be partially located within the USFWS designated Superior-Cronese critical habitat unit for desert tortoise (*Gopherus agassizii*) (Figure 3.1-1), which overlaps (and aligns) with the Superior-Cronese Lakes Desert Wildlife Management Area of the West Mojave Plan (Figure 3.1-2).

ICF performed a biological resources investigation within the biological survey area (BSA) that generally consisted of the project components plus a 100-foot buffer and access roads plus a 50-foot buffer. Presence/absence desert tortoise surveys, vegetation mapping, and special-status plant surveys were conducted within the BSA. However, to comply with the California Department of Fish and Game (now CDFW) *Staff Report on Burrowing Owl Mitigation* (2012), the western burrowing owl (*Athene cunicularia*) survey area included a 500-foot buffer surrounding project components but not inclusive of access roads. A combined wildlife survey area (WSA) includes the 500-foot buffer surrounding the project components and a 50-foot buffer surrounding the access roads.

Regulatory Setting

The Proposed Action would be implemented in compliance with all applicable local, state, and federal laws and regulations. These laws are summarized below.

Federal Environmental Regulations

Federal Endangered Species Act

The federal Endangered Species Act (FESA) of 1973 (50 CFR 17) is aimed at the protection of plants and animals that have been identified as being at risk of extinction, and classified as either threatened or endangered. Section 9 of the FESA also regulates the “taking” of any endangered fish or wildlife species. As development is proposed, the responsible agency or individual landowner is required to submit to a formal consultation with USFWS to assess potential impacts on listed species (including plants) or their critical habitat as the result of a development project, pursuant to Section 7 of the FESA.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) was enacted in 1918. The MBTA (16 U.S. Code 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The number of bird species covered by the MBTA is extensive, and is listed at 50 CFR 10.13. The regulatory definition of “migratory bird” is broad and includes any mutation or hybrid of a listed species and any part, egg, or nest of such birds (50 CFR 10.12). Migratory birds are not necessarily federally listed as endangered or threatened under the FESA. The MBTA, which is enforced by USFWS, makes it unlawful “by any means or in any manner, to pursue, hunt, take, capture, [or] kill” any migratory bird, or attempt such actions, except as permitted by regulation. The applicable regulations prohibit the take, possession, import, export, transport, sale, purchase, barter, or offering of these activities, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11).

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act makes it illegal to import, export, take (which includes molest or disturb), sell, purchase, or barter any bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*), or parts thereof. USFWS oversees enforcement of this act. The 1978 amendment authorizes the U.S. Secretary of the Interior to permit the taking of golden eagle nests that interfere with resource development or recovery operations. The act’s regulations authorize issuance of incidental take permits of bald and golden eagles under limited circumstances.

Clean Water Act

Pursuant to Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) is authorized to regulate any activity that would result in the discharge of dredged or fill material into waters of the U.S. (including wetlands), which include those waters listed in 33 CFR 328.3 (Definitions). USACE, with oversight from USEPA, has the principal authority to issue CWA Section 404 permits. Pursuant to Section 401 of the CWA, the Regional Water Quality Control Board (RWQCB) certifies that the discharge will comply with state water quality standards. RWQCB, as delegated by USEPA, has the principal authority to issue a CWA Section 401 water quality certification or waiver.

The National Pollutant Discharge Elimination System (NPDES) is the permitting program for discharge of pollutants into surface waters of the U.S. under Section 402 of the CWA. Significant impacts on wetlands may require an Individual Permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A water quality certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions.

Executive Order 13112, Invasive Species

Executive Order (EO) 13112 requires federal agencies to “prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health effects that invasive species cause.” An invasive species is defined by the EO as “an alien species [a species not native to the region or area] whose introduction does or is likely to cause economic or environmental harm or harm to human health.”

California Desert Conservation Area Plan

Per 43 CFR 1610.5-3, BLM must manage the land within its jurisdiction in compliance with a Resource Management Plan. An area within the northwestern portion of the project would be located on lands under BLM jurisdiction and managed pursuant to the CDCA Plan (Figure 3.1-2). The CDCA Plan covers approximately 25 million acres, of which 10 million are administered by the BLM. The CDCA Plan was enacted so that “the use of all California desert resources can and should be provided for in a multiple use and sustained yield management plan to conserve these resources for future generations, and to provide present and future use and enjoyment, particularly outdoor recreation uses, including the use, where appropriate, of off-road recreational vehicles.” The BLM was directed to prepare a plan to accomplish this through the “management, use, development, and protection of public lands within the California Desert Conservation Area,” of which the western Mojave Desert composes the northwestern third.

West Mojave Plan

The FLPMA requires the BLM to develop land use plans (also known as Resource Management Plans, such as the CDCA Plan described above) to guide its management of public land. The BLM must determine if the Proposed Action conforms to the CDCA Plan, including the West Mojave Plan, which is an amendment to the CDCA Plan.

Thirty Areas of Critical Environmental Concern were established within the western Mojave Desert. An Area of Critical Environmental Concern is designated by BLM as a place needing special management to protect and preserve its important biological resources (BLM 2005).

State Environmental Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) prohibits the take of any fish, wildlife, or plant species listed as endangered or threatened, or designated as candidates for listing, under the CESA. *Take* refers to mortality or injury of the listed species itself and not the modification of a listed species’ habitat. Like the FESA, the CESA contains a procedure for CDFW to issue a Section 2081 incidental take permit authorizing the take of listed and candidate species incidental to an otherwise lawful activity, subject to specified conditions, including that the impacts of the take are fully mitigated.

Regional Water Quality Control Board

The RWQCB is the primary agency responsible for protecting water quality in California. The RWQCB regulates discharges to surface waters under the federal CWA and the California Porter-Cologne Water Quality Control Act. The RWQCB's jurisdiction extends to all waters of the state and all waters of the U.S., including wetlands (isolated and non-isolated conditions).

Through 401 Certification, Section 401 of the CWA allows the RWQCB to regulate any proposed federally permitted activity that may affect water quality. Such activities include the discharge of dredged or fill material, as permitted by USACE, pursuant to Section 404 of the CWA. The RWQCB is required to provide "certification that there is reasonable assurance that an activity that may result in the discharge to waters of the United States will not violate water quality standards," pursuant to Section 401. Water Quality Certification must be based on the finding that proposed discharge will comply with applicable water quality standards.

In addition, pursuant to the Porter-Cologne Water Quality Control Act, the state is given authority to regulate waters of the state, which are defined as any surface water or groundwater, including saline waters. As such, any person proposing to discharge waste into a water body that could affect its water quality must first file a Report of Waste Discharge if a Section 404 does not apply. "Waste" is partially defined as any waste substance associated with human habitation, including fill material discharged into water bodies.

Environmental Setting

Vegetation

Four vegetation communities/land cover types were observed during surveys of the of the BSA in May 2016 and October 2016: Anderson's boxthorn scrub, barren – not developed, creosote bush – white bur sage scrub, and developed (Figure 3.1-3; Table 3.1-1). Each of these vegetation communities/land cover types is described below.

Table 3.1-1. Vegetation Communities and Land Cover Types Occurring within the Biological Survey Area

Manual of California Vegetation		Biological Survey Area (acres)
Common Name	Alliance	
Anderson's Boxthorn Scrub	<i>Lycium andersonii</i> Shrubland	11.46
Barren – Not Developed	Barren – Not Developed	6.78
Creosote Bush – White Bur Sage Scrub	<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> Shrubland	171.42
Developed	Developed	0.20
Total		189.87

Anderson's Boxthorn Scrub

Anderson's boxthorn scrub occurs within the eastern portion of the BSA near the communication tower at the top of Calico Peak in the Calico Mountains. This vegetation community is very open and rocky, characterized by Anderson's boxthorn (*Lycium andersonii*). Common associates include white bur sage (*Ambrosia dumosa*) and Cooper's goldenbush (*Ericameria cooperi* var. *cooperi*) (Sawyer et

al. 2009). The BSA includes approximately 11.46 acres of Anderson's boxthorn scrub (Figure 3.1-3; Table 3.1-1).

Barren – Not Developed

Barren – not developed areas occur throughout the BSA and consist of existing roads and trails. These areas support native soils but are unvegetated. The BSA includes approximately 6.78 acres of barren – not developed areas (Figure 3.1-3; Table 3.1-1).

Creosote Bush – White Bur Sage Scrub

The dominant vegetation community throughout the BSA is creosote bush – white bur sage scrub and there are approximately 171.42 acres of this vegetation community in the BSA (Figure 3.1-3; Table 3.1-1). This vegetation community is fairly open, occurring in rocky to gravelly soils, on varying aspects and slopes. This vegetation community is composed of creosote bush (*Larrea tridentata*) and white bur sage. Common associates include bladder sage (*Scutellaria mexicana*), shadscale (*Atriplex confertifolia*), Mojave Desert California buckwheat (*Eriogonum fasciculatum* var. *polifolium*), winter fat (*Krascheninnikovia lanata*), desert trumpet (*Eriogonum inflatum*), and Mediterranean grass (*Schismus barbatus*) (Sawyer et al. 2009).

Developed

The developed area consists of the portion of Fort Irwin Road as it crosses the western portion of the BSA and the communication tower development at the eastern boundary of the BSA. These areas are fully developed and unvegetated. Approximately 0.20 acre of developed areas is present in the BSA (Figure 3.1-3; Table 3.1-1).

Migratory Birds

Many species of migratory birds were observed in the field surveys conducted in 2016 (ICF 2016a). The project area supports nesting habitat for a wide variety of migratory bird species, including BLM sensitive birds. Nesting birds are protected by the MBTA.

Special-Status Species

BLM policy for management of special-status species is set forth in the BLM Manual Section 6840 and further defined in BLM California Manual Supplement 6840.06. Special-status species in this EA are those that meet any of the following criteria.

- Federally listed as threatened or endangered species: a plant or animal species in danger of extinction throughout all or a significant portion of its range.
- Federally proposed as threatened or endangered species: a plant or animal species that is proposed in the Federal Register to be listed under FESA Section 4.
- Federal candidate species: a plant or animal species for which USFWS or the National Marine Fisheries Service has on file sufficient information on biological vulnerability and threats to support a proposal to list as threatened or endangered. As policy, all federal candidates are included in the BLM Sensitive Species category.
- BLM Sensitive Species: species that have been determined to require special management consideration to avoid potential future listing under the FESA.

- State of California Listed Species: State-protected animals that have been determined to meet BLM's Manual 6840 policy definition.

Also included within this EA are species protected by the California Code of Regulations (CCR), as these species may not be taken at any time.

- California Fish and Game Commission CCR, Subdivision 2, Chapter 5, Furbearing Mammals 460: fisher (*Pekania pennanti*), marten (*Martes* spp.), river otter (*Lontra* spp.), desert kit fox (*Vulpes macrotis arsipus*), and red fox (*Vulpes vulpes*) may not be taken at any time.

Regulated Plants

A literature review determined that four special-status plants have the potential to occur in the BSA (ICF 2016a). Rare plant surveys were conducted in the BSA by ICF botanists in May 2016 and October 2016.

Non-listed Special-Status Plant Species

In addition to the federally listed as endangered Lane Mount milk-vetch, three other non-listed special-status plant species were determined to have some potential to occur within the BSA: Barstow woolly sunflower (*Eriophyllum mohavense*), Mojave menodora (*Menodora spinescens* var. *mohavensis*), and Beaver Dam breadroot (*Pediomelum castoreum*). However, none of these BLM Sensitive Species were observed during any survey efforts, including during rare plant surveys.

Regulated Wildlife

Ten special-status wildlife species were determined to have a moderate to high potential to occur in the project area based on known records in the region:

- Desert tortoise,
- Mohave ground squirrel,
- Golden eagle,
- American peregrine falcon,
- Burrowing owl, Desert bighorn sheep,
- Townsend's big-eared bat,
- Pallid bat,
- Western mastiff bat, and
- Desert kit fox.

The status, basic habitat requirements, survey results, and potential for occurrence for each are described below.

Federally and State-Listed Wildlife Species

Desert Tortoise

Presence/absence surveys for the federally listed threatened and state-listed threatened desert tortoise (*Gopherus agassizii*) were conducted in the BSA by approved ICF biologists in May 2016 and October 2016 (ICF 2016b). Suitable desert tortoise habitat occurs throughout the entirety of the

project area. Sign of desert tortoise was observed within the BSA during presence/absence surveys and in the BSA incidentally during other surveys; however, no live desert tortoises were observed. Observations included desert tortoise carcasses, desert tortoise scat, an active desert tortoise burrow, and other suitable desert tortoise burrows (Figure 3.1-4).

The USFWS-designated Superior-Cronese Critical Habitat Unit for desert tortoise is north of Barstow and Interstate 15. The northwestern portion of the project area is within this unit (Figures 3.1-1 and 3.1-5) and overlaps with 3.942 acres of desert tortoise critical habitat.

Mohave Ground Squirrel

Mohave ground squirrel (*Xerospermophilus mohavensis*) is a BLM Sensitive Species and is listed as threatened under CESA. Protocol surveys for Mohave ground squirrel were not conducted; however, during the habitat assessment, portions of the project area were determined to provide suitable habitat for Mohave ground squirrel. No Mohave ground squirrels were incidentally observed within the BSA during surveys conducted in 2016, although antelope ground squirrels (*Ammospermophilus leucurus*) were observed. A formal Mohave ground squirrel habitat assessment was conducted and the extent of suitable habitat within the project area was mapped. Because protocol surveys are not planned to be conducted, the species' presence is assumed for all areas that are determined to be suitable.

BLM Sensitive Wildlife Species

Golden Eagle and American Peregrine Falcon

Golden eagle (*Aquila crysaetos*) (a state fully protected species and protected under the Bald and Golden Eagle Protection Act). BLM data shows three historic Nest locations within 3 miles of the project (Figure 3.1-6). Similarly, nesting habitat for American peregrine falcon (*Falco peregrinus anatum*), a state fully protected species, was not observed, but could exist in areas not viewable by surveyors and/or within 10 miles of the project, and foraging habitat for this species is present.

Burrowing Owl

Burrowing owl (*Athene cunicularia*) is a BLM Sensitive Species. It inhabits open, dry, nearly or quite level grassland, prairie, and desert floors. Its distribution in the Mojave Desert is likely governed by vegetation density, availability of suitable prey, availability of burrows or suitable soil, and disturbance. Surveys for burrowing owls were conducted throughout the project area in accordance with the 2012 California Department of Fish and Game (now CDFW) Staff Report (CDFG 2012) during the breeding season. No burrowing owls or burrowing owl sign were observed during the surveys. However, suitable burrows were observed, so the potential for burrowing owls to occur within the project area, though low, is possible.

Special-Status Bats

Townsend's big-eared bat (*Corynorhinus townsendii*), a BLM Sensitive Species and a candidate for listing as threatened under CESA, and pallid bat (*Antrozous pallidus*), a BLM Sensitive Species, may use caves in the project area for roosting. Western mastiff bat (*Eumops perotis californicus*), a BLM Sensitive Species, may also roost in rock faces/crevices in the project area. Two potential bat roosts were observed in the BSA during surveys conducted in May 2016. Both potential roosts were caves, with one occurring approximately 300 feet from the project site and the other approximately 150 feet from the access road and about 750 feet from the nearest pole. Bat guano was observed in one

of the caves, indicating that an active roost may be present. The other potential roost appeared to be a cave but was on a steep mountain slope and inaccessible. Some of the potential special-status bat species in the area roost in cracks in rocks; as such, numerous potential roost sites may exist.

Other Special-Status Wildlife

Desert Kit Fox

Desert kit fox (*Vulpes macrotis arsipus*) is a furbearing mammal that may not be taken at any time per the California Fish and Game Commission Code of Regulations. Numerous potentially active desert kit fox dens and complexes were observed within the BSA and ten burrows were identified as having recent use.

Invasive and Nonnative Species.

Three nonnative invasive weed species (California Invasive Plant Council [Cal-IPC] Rated High or Moderate) were detected within the BSA: Saharan mustard (*Brassica tournefortii*; Cal-IPC High), red brome (*Bromus rubens*; Cal-IPC High), and London rocket (*Sisymbrium irio*; Cal-IPC Moderate). Approximately 35 individuals of Asian mustard were detected immediately adjacent to Fort Irwin Road and another 15 individuals in the central portion of the BSA. Red brome and London rocket are ubiquitous throughout the BSA.

3.1.2 Environmental Effects

Proposed Action

This section addresses project-related impacts on vegetation communities and special-status plant and wildlife species during project construction and operation phases. Direct and indirect impacts may be either temporary or permanent, and impact categories are discussed below.

- Direct impacts are caused by the Proposed Action and occur at the same place and time as the Proposed Action. Any alteration, disturbance, or destruction of biological resources that occurs as a result of project-related activities is a direct impact. Direct impacts include direct losses to native habitats, potential jurisdictional waters, and wetlands and sensitive species, and diversion of natural surface water flows. Direct impacts may include injury, death, and/or harassment of listed and/or sensitive species. Direct impacts on wildlife may also include the destruction of breeding, feeding, or sheltering habitat. Direct impacts on plants could include the crushing of adult plants, bulbs, or seeds.
- Indirect impacts may occur later than direct impacts or at a place that is removed from the direct impacts of the Proposed Action, but these impacts are still reasonably foreseeable and can be attributed to project activities. Examples of indirect impacts include: habitat fragmentation, elevated lighting levels, dust, or noise; compaction of soil; increased human activity; changes in hydrology, runoff, and sedimentation; decreased water quality; and the introduction of invasive plants and wildlife.

Temporary and Permanent Impacts

- Permanent impacts are those impacts that result in the long-term or irreversible removal of biological resources to be considered permanent. Examples include the construction of a

building or permanent road in an area containing biological resources. Due to the very slow natural recovery in arid ecosystems, surface disturbance that removes vegetation and disturbs the soil without revegetation is considered a permanent impact and all such effects are therefore considered permanent.

- Temporary impacts are those that have reversible effects on biological resources. Examples include fugitive dust generation during construction or temporary linear projects where the vegetation is removed, but the natural vegetation is actively revegetated or allowed to naturally recolonize.

Vegetation Communities

Table 3.1-2 identifies the vegetation communities and other cover types within the disturbance area that would be directly affected, both temporarily and permanently. The entire alignment supports vegetation communities that are non-sensitive. Direct, permanent impacts on approximately 0.011 acre of non-sensitive creosote bush – white bur sage scrub and 0.002 acre of Anderson’s boxthorn shrub vegetation would occur as a result of implementation of the Proposed Action. Direct, temporary impacts on approximately 6.431 acres of creosote bush – white bur sage scrub and 0.677 acres of Anderson’s boxthorn scrub would occur as a result of implementation of the Proposed Action. Impacts on creosote bush – white bur sage scrub and Anderson’s boxthorn vegetation communities would not be significant for two reasons: both habitat types are non-sensitive and the low acreage of impacts.

Table 3.1-2. Anticipated Permanent and Temporary Impacts on Vegetation Communities and Land Cover Types Occurring within the Disturbance Area

Manual of California Vegetation		Permanent Impacts (acres)	Temporary Impacts (acres)	Total Impacts (acres)
Common Name	Alliance			
Anderson’s Boxthorn Scrub	<i>Lycium andersonii</i> Shrubland	0.002	0.675	0.677
Barren – Not Developed	Barren – Not Developed	0.001	2.287	2.288
Creosote Bush – White Bur Sage Scrub	<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> Shrubland	0.012	6.431	6.442
Developed	Developed	0.001	0.042	0.043
Total		0.016	9.435	9.435

Potential temporary, indirect impacts on vegetation communities surrounding the Proposed Action would occur as a result of excavation activities creating airborne dust and potential off-site sedimentation. Potential permanent, indirect impacts include spreading of exotic plant species in native vegetation communities and increases in accidental wildfires (potentially caused by construction or downed new transmission wires) destroying or disturbing native vegetation communities. Potential accidental wildfires and ground-disturbance activities could result in invasion by exotic plant species. The introduction of exotic plant species could reduce native plant growth, recruitment, and dispersal. The potential spread of exotic species into the surrounding vegetation would be considered a permanent, indirect impact. Implementation of the environmental protection measures (BIO-1, BIO-2, DT-2, DT-6, DT-8) would reduce indirect impacts on vegetation communities, and significant impacts are not expected to occur.

Plant Species

No special-status plant species are expected to be subject to permanent, direct impacts from implementation of the Proposed Action.

No temporary or permanent indirect impacts on special-status plant species are expected to occur from implementation of the Proposed Action. No special-status plant species were detected within the BSA during 2016 surveys. Potential temporary and permanent indirect impacts (e.g., dust, erosion, sedimentation, weed introduction) on special-status plants would not be expected to extend outside of the project area because there are no known special-status plant species in the immediate vicinity of the Proposed Action.

Wildlife Species

Direct impacts include the destruction of habitat for special-status species and could result in injury, death, and/or harassment of these species. The use of helicopters to access pole locations would also result in direct impacts on special-status species, especially avian species. Direct strikes of avian species can occur during low flying operations and approaches and departures. Installation of project facilities and the establishment of work areas on site could result in direct impacts as well. Project construction could result in the crushing of occupied burrows, destruction of nests, collisions with construction and maintenance vehicles, and loss of habitat. Implementation of the environmental protection measures would reduce direct impacts on special-status wildlife species from the Proposed Action, and significant impacts are not expected to occur.

The Proposed Action would result in permanent and temporary indirect impacts on special-status wildlife species including edge effects such as from increased noise during construction, introduction of noxious weeds, perch and nesting platforms for common ravens (*Corvus corax*), air/dust pollution, increased predation pressure, and modifications to wildlife movement patterns to avoid construction activity, which includes any helicopter activity below 1,000 feet above the ground. Additional indirect impacts could result from invasive plants that outcompete native plants, or from accidental wildfires (potentially caused by construction or downed new transmission wires), both of which could reduce wildlife foraging habitat. Indirect impacts could also result from increased common raven and raptor predation on burrowing owl and other nesting birds associated with the addition of new elevated perching sites, including the distribution structures and distribution line. Implementation of the environmental protection measures would reduce indirect impacts on special-status wildlife species from the Proposed Action, and significant impacts are not expected to occur.

Desert Tortoise

Desert tortoise sign including carcasses, burrows (active and inactive), and scat was observed within the BSA. Areas with concentrations of dead desert tortoise without corresponding concentrations of live desert tortoise are generally the same areas where declines have been observed in the past. Declines have been observed in the northern portion of the Fremont-Kramer critical habitat unit and the northeastern part of the Superior-Cronese critical habitat unit (USFWS 2010).

Table 3.1-3. Anticipated Permanent and Temporary Impacts on Desert Tortoise Habitat within and Outside of Designated Critical Habitat

	Permanent Impact (acres)	Temporary Impacts (acres)	Total Impacts (acres)
Desert Tortoise Habitat - Within Critical Habitat	0.003	1.954	1.957
Desert Tortoise Habitat - Outside of Critical Habitat	0.013	7.431	7.444
Total Impacts (Acres)	0.016	9.385	9.401

The construction and installation of project components would permanently and directly affect approximately 0.016 acre of occupied desert tortoise habitat and would result in 9.385 acres of temporary impacts on occupied desert tortoise habitat. Included within these impacts are the permanent impacts on approximately 0.003 acre and temporary impacts on 1.954 acres of desert tortoise critical habitat. Construction of the Proposed Action could destroy desert tortoise burrows and would disturb foraging habitat. Desert tortoise could also be killed or injured during construction, as individuals could be entombed or crushed in their burrows.

Significant temporary direct impacts on desert tortoise could also occur from an increase in vehicle traffic while the Proposed Action is under construction, which could lead to an increase in vehicular strikes on roads near the project area. Implementation of the environmental protection measures—including desert tortoise preconstruction surveys and biological monitoring during construction—would reduce direct permanent and temporary impacts on desert tortoise and critical habitat. Significant impacts are not expected to occur.

Indirect impacts could result from a potential increase in the population of common raven resulting from the construction of new elevated perching and nesting sites (e.g., new distribution line poles). Additionally, garbage from increased human presence may attract common ravens. Currently, common ravens are not common within the project area. However, new features as a result of project construction could increase raven numbers and result in increased predation on desert tortoise. Indirect impacts could also result from invasive plants that outcompete native plants, or from increased incidence of accidental wildfires (potentially caused by downed new transmission wires), both of which could reduce foraging habitat for desert tortoise. Implementation of the environmental protection measures would reduce indirect impacts on desert tortoise and critical habitat, and significant impacts are not expected to occur.

Mohave Ground Squirrel

The Proposed Action could result in permanent, direct impacts on Mohave ground squirrel, as it is assumed that Mohave ground squirrel could occur on the project site. The current distribution and abundance of this species on the project site are unknown, but suitable habitat for the species was mapped and some areas (with steep slopes) were excluded from suitable habitat. Direct permanent impacts on Mohave ground squirrel would include the permanent loss of approximately 0.010 acre of potentially suitable Mohave ground squirrel habitat (Table 3.1-4). Direct temporary impacts on Mohave ground squirrel would include the temporary loss of approximately 7.04 acres of potentially suitable habitat (Table 3.1-4).

Table 3.1-4. Anticipated Permanent and Temporary Impact on Mohave Ground Squirrel Habitat

	Permanent Impacts (acres)	Temporary Impacts (acres)	Total Impacts (acres)
Mohave Ground Squirrel Habitat	0.010	7.04	7.050
No Potential for Mohave Ground Squirrel	0.006	2.36	2.366
Total (Acres)	0.016	9.40	9.416

It is assumed that project construction could result in direct loss of individuals during construction. Mohave ground squirrel mortality could result from excavation activities and installation of project facilities. Mohave ground squirrel could be crushed or entombed in their burrows during construction. The Proposed Action would also result in the loss of foraging and burrowing habitat.

Temporary impacts on Mohave ground squirrel could also occur. Temporary direct impacts on Mohave ground squirrel could result from an increase in vehicle traffic while the Proposed Action is under construction. The increased vehicular traffic volumes could lead to an increase in vehicular strikes on roads near the project site. Implementation of the environmental protection measures—including preconstruction surveys and biological monitoring during construction—would reduce direct permanent and temporary impacts on Mohave ground squirrel. Significant impacts are not expected to occur.

Indirect impacts could result from a potential increase in opportunistic predators (e.g., coyotes) as a result of garbage generated from increased human presence associated with construction. Indirect impacts could also result from invasive plants that outcompete native plants, or from accidental wildfires (potentially caused by construction or downed transmission wires), both of which could reduce foraging habitat for Mohave ground squirrel. Implementation of the environmental protection measures would reduce indirect impacts on Mohave ground squirrel, and significant impacts are not expected to occur.

Migratory Birds

Direct impacts on nesting migratory birds protected under MBTA—including golden eagle, American peregrine falcon, and other BLM sensitive birds—could occur as a result of vegetation disturbance during construction activities if they were to occur during the nesting season. Also, construction-related noise and other disturbances could result in nest failure, and downdrafts from helicopters could blow out active nests. The permanent loss of foraging habitat resulting from project construction is not expected to significantly reduce the number or otherwise significantly affect nesting birds because the loss of habitat would be minimal. Implementation of the environmental protection measures would reduce direct impacts on nesting birds, and significant impacts are not expected to occur.

Indirect impacts of project construction on nesting birds are discussed above under *Wildlife Species*.

Burrowing Owl

Burrowing owls were not observed within the BSA during surveys conducted in 2016. The entire approximately 9.40-acre disturbance area is considered suitable burrowing owl foraging and nesting habitat. Temporary direct impacts on burrowing owl could also result from an increase in vehicle traffic while the Proposed Action is under construction and, consequently, an increase in

vehicular strikes of this species. The following potential impacts on burrowing owl as a result of project implementation would require mitigation: (1) disturbance or harassment of burrowing owls within 160 feet of occupied burrows; (2) destruction of active burrows and burrow entrances; and (3) degradation of foraging habitat adjacent to occupied burrows. Implementation of the environmental protection measures would reduce direct impacts on burrowing owl, and significant impacts are not expected to occur.

Indirect impacts of project construction on burrowing owl are discussed above under *Wildlife Species*.

Desert Bighorn Sheep

While desert bighorn sheep tracks were observed within the BSA, there are no known watering or lambing sites associated with the BSA. Desert bighorn sheep forage over large home ranges, and the loss of foraging habitat through direct impacts would not be significant. Because no significant resources for this species (watering sites or lambing areas) are present, no other direct impacts are expected.

Indirect impacts of project construction on desert bighorn sheep are discussed above under *Wildlife Species*.

Bat Species

Direct permanent impacts on bat roosts are not expected, as no direct impacts on caves or other potential roost sites are anticipated. The permanent loss of foraging habitat resulting from project construction is not expected to significantly reduce the number or otherwise significantly affect bat species because the loss of habitat would be minimal.

Impacts on bats are expected to be mainly indirect, from disturbance of roost sites during construction activity, through either vibration of construction vehicles near roost sites, human disturbance too near roost sites, or helicopter disturbance of roost sites. The indirect degradation or loss of habitat resulting from indirect impacts on bat species would be temporary and minimal.

Desert Kit Fox

Suitable desert kit fox habitat occurs throughout the 9.40 acre-disturbance area. Desert kit fox burrows and complexes are distributed throughout the project area and were noted within the buffer areas. Temporary direct impacts on desert kit fox would also result from an increase in vehicle traffic while the project is under construction. Consequently, an increased potential for vehicular strikes of this species exists. Implementation of the environmental protection measures would reduce direct impacts on desert kit fox, and significant impacts are not expected to occur.

The permanent loss of foraging habitat resulting from project construction is not expected to significantly reduce the number or otherwise significantly affect this species because this species is relatively common regionally, similar quality habitat is present in the project vicinity, and the loss of habitat as a result of the project is minimal.

Indirect impacts of project construction on desert kit fox are discussed above under *Wildlife Species*.

Invasive and Nonnative Species

Surface disturbance associated with the Proposed Action has the potential to facilitate the introduction or establishment of invasive, nonnative species, including noxious weeds. Implementation of the environmental protection measures would reduce potential impacts, and significant impacts are not expected to occur.

3.2 Geology and Soils

This section describes the impacts related to geology and soils that would result from the construction and operation of the alternatives.

3.2.1 Affected Environment

Regulatory Setting

State

Alquist-Priolo Act: The primary purpose of the Alquist-Priolo Act is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. The law requires the state geologist to establish regulatory zones (known as Earthquake Fault Zones or Alquist-Priolo Zones) around the surface traces of active faults and issue locational maps to all affected cities, counties, and state agencies for their use in safe construction. Before a project may be permitted, a geologic investigation is required to demonstrate that proposed buildings would not be constructed across active faults. An evaluation and written report of a specific site must be prepared by a licensed geologist. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (generally 50 feet) (California Department of Conservation 2016).

Seismic Hazards Mapping Act of 1990: The California State Seismic Hazards Mapping Act of 1990 addresses earthquake hazards other than surface fault rupture, including liquefaction and seismically induced landslides. The state establishes city, county, and state agency responsibilities for identifying and mapping seismic hazard zones and mitigating seismic hazards to protect public health and safety. The act requires the California Department of Conservation, Division of Mines and Geology, to map seismic hazards and establishes specific criteria for project approval that apply within seismic hazard zones, including the requirement for a geological technical report.

California Building Code: The CCR, Title 24 (California Building Code) applies to all applications for building permits. The California Building Code (also called the California Building Standards Code) has incorporated the International Building Code, which was first enacted by the International Conference of Building Officials in 1927 and has been updated approximately every 3 years since that time. The current version of the California Building Code (2013) became effective on January 1, 2014.

Local agencies must ensure that development in their jurisdictions complies with guidelines contained in the California Building Code. Cities and counties can, however, adopt building standards beyond those provided in the code.

California Public Utilities Commission General Orders and Regulations: CPUC regulates privately owned public utilities including investor-owned electric and natural gas utilities operating in California. The following General Orders would apply to construction and operation of the Proposed Action:

- General Order 95 – Rules for Overhead Electric Line Construction

- General Order 165 – Inspection Requirements for Electric Distribution and Transmission Facilities
- General Order 166 – Standards for Operation, Reliability, and Safety During Emergencies and Disasters

Local

San Bernardino County General Plan: Section III, Circulation and Infrastructure Element, and Section V, Conservation Element, of the County's General Plan contain goals and policies related to soils. Section VIII, Safety Element, contains goals and policies related to geologic hazards.

Environmental Setting

Geology

The Proposed Action is within the BLM's West Mojave planning area. According to the January 2005 *Final Environmental Impact Report and Statement for the West Mojave Plan*, the West Mojave planning area is mainly in the Mojave Desert geomorphic province (Mojave Block) of California. The geomorphology of the province is dominated by broad basins filled with sediments shed from adjacent highlands and mountains, burying the old topography. The majority of the surface in the planning area is covered by Quaternary-age unconsolidated surficial deposits. These deposits are composed primarily of alluvial, fluvial, lacustrine, and aeolian derived material. The age of the rocks within the West Mojave planning area ranges from Precambrian to Recent and is characterized by great diversity, including marine and non-marine sedimentary rocks and a wide variety of volcanic and intrusive igneous rocks.

The West Mojave planning area is in Seismic Zone 3 and Seismic Zone 4, which are designations previously used in the Uniform Building Code to denote the areas of the highest risk to earthquake ground motion (California Seismic Safety Commission 2005). According to the State of California Special Studies Zones Yermo Quadrangle, the Proposed Action is not on an active fault or fault zone. The nearest active fault to the Proposed Action is the northern terminus of the Calico Fault, approximately 1.25 miles to the southeast (California Institute of Technology 2013). According to the San Bernardino County Land Use Plan Geologic Hazard Overlays map for Yermo, the Proposed Action is not in an area of landslide or liquefaction susceptibility (County of San Bernardino 2016).

Soils

Soils of the Mojave Desert occupy several different landscapes that range from low basins to high mountain ridges. Soils are nearly level to very steep, ranging from 2,000 to 4,200 feet in elevation, and are shallow, deep, or very deep and well to excessively drained. Surface layers range from sand to clay loam. Soils are used for rangeland, recreation, or wildlife habitat. Where water is available, a few of the soils are used for cropland or homesites (BLM 2005).

According to the Natural Resources Conservation Service, the project is in a mapping unit designated as Upspring-Sparkhule-Rock Outcrop (s1127). The mapping unit constituents are described in more detail below. None of the soil series that make up the mapping unit are listed as hydric. The Natural Resources Conservation Service defines a *hydric soil* as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

- **Rock Outcrop:** The phase at which much of the landscape is dominated by exposures of bare bedrock. There is no soil characterization description for this phase.
- **Upspring:** consists of very shallow and shallow, somewhat excessively drained soils formed in material weathered from extrusive basic igneous rocks and some pyroclastic material. Upspring soils are on hills, mountains, and plateaus at elevations of 1,600 to 4,400 feet and have slopes of 8 to 75 percent. These soils have moderately rapid permeability over impermeable rock and are moderately extensive in the lava flows of the northern California desert.
- **Sparkhule:** Consists of shallow to rock, well-drained soils that formed in residuum from volcanic or granitic rocks. Sparkhule soils are on rock pediments and hills at elevations from 2,300 to 4,500 feet and have slopes of 5 to 50 percent. These soils have moderately slow permeability and are moderately extensive within the Mojave Desert.

3.2.2 Environmental Effects

Proposed Action

As mentioned in Section 3.2.1, geologic hazards such as fault rupture, landslides, or liquefaction are unlikely to occur in the project area. However, as with most Southern California regions, the project area would be subject to strong ground shaking in the event of a major earthquake. The effects of seismic shaking are dependent on the distance between the project area and the causal fault and on-site geology. The closest major active fault is the Calico Fault, approximately 1.25 miles to the southeast; as a result, the Proposed Action could be subject to future seismic shaking and strong ground motion resulting from seismic activity, and damage could occur.

Due to the nature of the Proposed Action, it would not draw a significant amount of people, either during construction activities or permanently. Moreover, no structures intended for human occupation would be built, and therefore potential risk to the occasional personnel visiting the site (for maintenance) would be limited. Also, construction of the Proposed Action would be subject to applicable ordinances of the 2013 California Building Code (CCR Title 24).

Ground-disturbing activities associated with construction of the Proposed Action would involve mechanically excavating holes for new poles using an auger; or in areas inaccessible by vehicle, crews would travel on foot to reach work sites and would use pneumatic tools such as a gas powered auger or shovel to manually excavate holes for new poles. Holes would measure approximately 3 feet in diameter by approximately 6 to 10 feet deep for the installation of replacement poles. Minor grade leveling with hand tools for installation of new ground anchors at selected poles and installation of a slab box would also disturb soil. The area of soil disturbance would be limited to a radius of 5 to 10 feet around the poles, and light disturbance (primarily overland vehicle travel) would be present within a general 25-foot radius around each pole. The existing pole on the west side of Fort Irwin Road would be pulled utilizing a boom truck, and the excavated hole would be backfilled with excavated soil. The Proposed Action would not require import or export of soil and the excavated soil from new pole locations would be spread around the new pole locations.

The Proposed Action would comply with the Statewide Construction General Permit that requires implementation of a SWPPP to address erosion and sedimentation at the project site during construction activities. Temporary BMPs—such as silt fences, straw waddles, sediment traps, gravel sandbag barriers, or other effective BMPs—would be implemented to control runoff and erosion

during construction activities. Implementation of erosion and sediment control BMPs would further prevent soil erosion and sedimentation from exposed soils.

Inspections and operation and maintenance activities associated with the Proposed Action would be conducted by air or from existing access roads, work areas, and trails, and would not involve ground or vegetation disturbance. Therefore, operational activities associated with the Proposed Action would not result in a significant adverse effect on soils. Maintenance frequencies would vary in relation to normal wear and several other factors including, but not limited to, dirt, dust, bird activity, and severity of storms.

No Action Alternative

Under the No Action Alternative, the applicant would not extend the existing Remote 33 kV overhead distribution line and, as such, no geologic or soils effects would occur.

3.3 Paleontological Resources

Paleontological resources are the remains of prehistoric plant and animal life. Paleontological resources are typically affected when earthwork activities such as mass excavation cut into sedimentary geological deposits (formations) with buried fossils, but impacts can also occur during activities with less ground disturbance such as the pole replacements for the Proposed Action. These impacts are in the form of physical destruction of fossil remains. Because fossils are considered to be non-renewable, such impacts are considered significant. The information in this section is based on the 2016 Paleontological Survey Report prepared by Paleo Solutions, Inc., hereby incorporated by reference.

3.3.1 Affected Environment

The paleontological resources study area includes a 76-meter corridor that centers on a proposed 4.43-mile long 33 kV overhead distribution line. Approximately 3.01 miles of the alignment would be on BLM lands and 1.42 miles would be on DOD lands. In total, the paleontological resources study area encompasses 134.2 acres, approximately 91.2 of which are on BLM lands and 43 of which are on DOD lands. The Proposed Action would originate in Fort Irwin Road and continue to a communication tower at the top of Calico Peak in the Calico Mountains. A paleontological records search, literature review, and pedestrian survey were conducted for the Proposed Action and are discussed more fully in the sections below.

Regulatory Setting

Federal

If any federal funding is used to wholly or partially finance a project that occurs on federal lands, involves a federal permit, and/or includes a perceived federal impact, federal laws and standards apply, and an evaluation of potential impacts on paleontological resources may be required. The management and preservation of paleontological resources on public and federal lands are prescribed under various laws, regulations, and guidelines.

The Antiquities Act of 1906 (16 USC 431–433) states, in part, that any person who appropriates, excavates, injures, or destroys any historic or prehistoric ruin or monument, or any object of antiquity (including paleontological resources), situated on lands owned or controlled by the government of the United States, without the permission of the Secretary of the department of the government having jurisdiction over the lands on which said antiquities are situated, shall, upon conviction, be fined in a sum of not more than \$500 or be imprisoned for a period of not more than 90 days, or shall suffer both fine and imprisonment, at the discretion of the court.

Paleontological Resources Preservation Act (2009). This legislation directs the Secretaries (of the Interior and Agriculture) to manage and protect paleontological resources on federal land using “scientific principles and expertise.” In passing the PRPA, Congress officially recognized the scientific importance of paleontological resources on some federal lands by declaring that fossils from these lands are federal property that must be preserved and protected. The PRPA codifies existing policies of the BLM, National Park Service, U.S. Forest Service, Bureau of Reclamation, and USFWS.

Federal Land Policy and Management Act of 1976. The act does not refer specifically to fossils. However, “significant fossils” are understood and recognized in policy as scientific resources.

Permits that authorize the collection of significant fossils for scientific purposes are issued under the authority of the act.

State

State of California Public Resources Code. The State of California Public Resources Code (Chapter 1.7), Sections 5097 and 30244, includes additional state-level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts on paleontological resources resulting from development on state lands, and define as a misdemeanor the excavation, destruction, or removal of paleontological “sites” or “features” from public lands without the express permission of the jurisdictional agency.

Local

San Bernardino County

The County of San Bernardino General Plan Conservation Element contains goals and policies regarding paleontological resources. The General Plan states that the study of non-renewable paleontological resources helps to interpret the past history of the county; therefore, the county requires consideration of these paleontological resources in county activities via the County of San Bernardino Paleontologic Resources Overlay, which mitigates impacts on significant fossil resources.

Geologic Setting

The project area is within the Calico Mountains, which contain several geologic units of Miocene to Holocene age, as well as a number of faults. Within the project area, the Pickhandle Formation is present as are several igneous formations, along with Pleistocene-age older alluvium and Holocene-age younger alluvium. The Barstow Formation has not been mapped in the project area itself; however, outcrops are known from the general vicinity, and the lower parts of the formation interfinger with the upper parts of the Pickhandle Formation; therefore, the Barstow Formation may also be present. The Pickhandle tuff breccias were deposited first during the early Miocene, followed by localized lacustrine deposits from the Middle Miocene Barstow Formation. Several igneous intrusions are mapped as having occurred as early as the Oligocene, but an Oligocene age for these rocks is unlikely as they intrude into Miocene-age rocks. Most of the igneous intrusions are younger than the Barstow and Pickhandle formations, and the last igneous events in the area were the volcanic flows that deposited the Lane Mountain Andesite.

Quaternary Alluvium (Qa)

Quaternary alluvium (Qa) is mostly Holocene in age. This geologic unit is made up of fluvial sequences and alluvial fans, mostly on the lower parts of slopes and in valleys. These are made of poorly consolidated and poorly sorted sediment ranging from fine sand in the lowest areas to pebbles and gravel in the higher parts. Due to the young age of these deposits, they are assigned a low paleontological potential.

Quaternary Older Alluvium (Qoa)

Pleistocene-age Quaternary older alluvium (Qoa) is a poorly sorted and poorly bedded sequence of light gray gravel, sand, and silt that overlies the younger Holocene-age Quaternary alluvium on

mountain slopes. These sediments also fill valleys throughout the project area. These deposits include igneous rocks reworked from the underlying formations. Quaternary older alluvium is assigned a moderate paleontological potential.

Lane Mountain Andesite (Tap, TpvI, TpvR)

The Lane Mountain Andesite (Tap), most likely Pliocene in age, is a volcanic formation made of massive red-brown andesite and dacite porphyry. It is composed largely of hornblende and biotite. Some of the phenocrysts are similar in composition, but many of these are composed of plagioclase. This formation also includes intrusive igneous rocks. These are also made of andesite and dacite porphyry, but they are more porous, some show flow patterns, and they are tan to brown in color. These rocks compose the majority of the bedrock mapped in the central project area. TpvI represents a latite lava flow. It is porphyritic and very hard, forming a protective caprock above underlying formations. This outcrop is located on the southeastern end of the large Pickhandle Formation outcrop at the western end of the project area. TpvR is composed of intrusive rhyolite and latite, along with a hard, resistant extrusive andesite that serves as a caprock. This unit forms small outcrops near the eastern end of the project area, along with one near the western end overlying the Pickhandle Formation. The Lane Mountain Andesite is assigned a very low paleontological potential.

Pickhandle Formation (Tp, Tpvda)

The Early to Middle Miocene Pickhandle Formation (Tp) comprises a series of pyroclastic breccias. Granitic, rhyolitic, and tuff breccias are all present within the Pickhandle Formation. The lower parts include conglomerate with occasional sandstones, although these sediments are not mapped in the project area. Several sections, particularly those in the project area, are composed of tuff and basalt flows. Elsewhere, the upper layers interfinger with and eventually grade into the overlying Barstow Formation. The Pickhandle Formation is exposed in a large part of the western end of the project area, where it includes an andesite-dacite lava flow (Tpvda). The Pickhandle Formation is assigned a low paleontological potential.

Intrusive Volcanic Rocks (Tt)

This designation (Tt) refers to several different intrusive igneous rocks from the Pliocene and earlier that underlie the majority of the project area's eastern end. These rocks are composed of porphyritic andesite and dacite. These units are assigned a very low paleontological potential.

Paleontological Setting and Survey

A paleontological search of records maintained by San Bernardino County Museum (SBCM) was requested for the project area. However, SBCM was unable to complete the request due to a change in staff. Therefore, Robert Reynolds, former SBCM paleontology curator and paleontologist specializing in the region, was consulted regarding known fossil localities in the project vicinity. The project area includes several geologic units of Miocene to Holocene age, as well as a number of faults. These units include the igneous rocks forming the mountains themselves, the volcanoclastic Pickhandle Formation, the sandstone-mudstone sequences of the Barstow Formation, and Quaternary older and younger alluvium deposits. Although fossils are rare in the Pickhandle Formation, they are present. In 2015, fossil gastropods were reported from a lacustrine deposit of the Pickhandle Formation less than 2 miles from the western end of the project area. If the Barstow Formation is present in or near the mapped Pickhandle Formation units, the potential for

paleontological resources increases dramatically. The Barstow Formation contains numerous fossils, including the earliest North American proboscideans. However, the Owl Conglomerate Member that interfingers with the Pickhandle Formation contains fewer fossils than the middle and upper units. Of the remaining geologic units within the project area, only older alluvium is considered to have potential to contain fossil resources. While no fossils have been reported from the project area, Pleistocene fossils have been recovered from similar older alluvial sediments throughout Southern California.

A paleontological field survey of the project area was conducted on September 9, 2016. All appropriate permits and permissions were acquired prior to surveying. The paleontological survey was performed in order to search for paleontological resources that may be affected during construction, to assess the lithology, and determine the paleontological sensitivity of the geologic deposits underlying the survey area. No new significant paleontological resources were discovered during the survey. However, Pleistocene older alluvium deposits that appear conducive to fossil preservation were observed, including several outcrops that have not been mapped. In addition, the Pickhandle Formation conglomerates, sandstones, and lacustrine deposits have potential to contain fossils; however, these lithologies were not observed in the Pickhandle Formation within the project area.

3.3.2 Environmental Effects

A significant impact on paleontological resources would result if any of the following were to occur from construction or operation of the Proposed Action: direct or indirect destruction of a unique paleontological resource, site, or unique geologic feature.

Proposed Action

Due to the presence of Pleistocene sediments in the project area, the possibility exists that a unique paleontological resource, site, or geologic feature may occur within the project area. Environmental protection measures, including monitoring during construction activities, have been incorporated to minimize potential adverse effects. Spot-check monitoring should be conducted in those areas during excavations to reduce adverse effects below the level of significance pursuant to NEPA. In areas where Pleistocene age sediments were not observed, spot checking when excavations affect or exceed 5 feet depth is recommended, as these younger sediments may harbor older sediments shallowly below. Following initial ground disturbance, monitoring can be either instituted full-time or can be reduced, based on sediment observations.

No Action Alternative

The No Action Alternative would not lead to the direct or indirect destruction of a unique paleontological resource, site, or unique geologic feature. Paleontological resources would not be disturbed. There would be no unmitigated adverse effects on paleontological resources.

3.4 Water Resources

This section presents information on surface and groundwater resources conditions within the project vicinity and identifies potential water resources impacts resulting from the construction and operation of the Proposed Action.

3.4.1 Affected Environment

The information in this section is based on the 2016 Jurisdictional Delineation Report and the 2016 Calico Peak Utility 33 kV Pole Line Project Waters Impact Assessment prepared by ICF (ICF 2016a, 2016b). ICF biologists performed a desktop review and field investigation to identify the potential for jurisdictional waters (including wetlands) within the study area. The study area for the jurisdictional delineation included a 100-foot buffer around each project component and access road, as well as the areas between the pole alignments.

Regulatory Setting

Federal

Clean Water Act

The CWA is the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The CWA prohibits any discharge of pollutants into the nation's waters unless specifically authorized by a permit. The applicable sections of the CWA are further discussed below.

Comprehensive Programs for Water Pollution Control (Section 102)

Section 102 requires the planning agency of each state to prepare a basin plan that sets forth regulatory requirements for the protection of surface water quality, including designated beneficial uses for surface water bodies, as well as specified water quality objectives to protect those uses. The degree to which discharges of runoff from a project adversely affect beneficial uses of project receiving waters and attainment by the receiving waters of assigned water quality objectives indicates the degree to which a project may affect the quality of existing surface waters.

Permit for Fill Materials in Waters and Wetlands (Section 404)

Under Section 404, USACE and USEPA regulate the discharge of dredged and fill materials into the waters of the U.S. Project sponsors must obtain a permit from USACE for discharges of dredged or fill materials into proposed jurisdictional waters over which USACE determines that it will exert jurisdiction.

National Pollutant Discharge Elimination System Program (Section 402)

Under Section 402, all point-source discharges including, but not limited to, construction-related runoff discharges to surface waters and some post-development, are regulated through the NPDES program.

Clean Water Quality Certification (Section 401)

Under Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a dredged or fill material into waters of the U.S. must obtain certification that the discharge of fill will not violate water quality standards, including water quality objectives and beneficial uses. The certification is issued by the state in which the discharge would originate or from the interstate water pollution control agency with jurisdiction over affected waters. In California, the RWQCBs and the State Water Resources Control Board (SWRCB) issue Section 401 certifications.

Water Quality Impairments (Section 303(d))

Section 303(d) requires each state to provide a list of impaired surface waters that do not meet or are expected not to meet state water quality standards, as defined by that section. It also requires each state to develop total maximum daily loads of pollutants for impaired waterbodies. The total maximum daily load must account for the pollution sources causing the water to be listed.

Executive Order 11988, Floodplain Management

EO 11988 on Floodplain Management addresses concerns over about the potential loss of the natural and beneficial functions of the nation's floodplains as well as the increased cost to federal, state, and local governments from flooding disasters that are worsened by unwise development of the floodplain. When funding actions, federal agencies are required to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

State**Porter-Cologne Act of 1969**

The Porter-Cologne Act requires regional compliance with state water quality plans adopted by SWRCB. RWQCBs prepare water quality plans for nine regions in California. The plans identify the beneficial uses of water that should be protected, establish water quality objectives, and define an implementation program to meet water quality objectives. Any entity proposing to discharge a waste must file a Report of Waste Discharge with SWRCB or the appropriate RWQCB.

The Lahontan Basin Water Quality Control Plan (Basin Plan), in accordance with criteria contained in the California Porter-Cologne Water Quality Control Act, the federal CWA, and other pertinent state and federal rules and regulations, provides definitive guidelines and gives direction to the full scope of regional board activities that serve to optimize the beneficial uses of the state waters within the Lahontan Basin Region of California by preserving and protecting the quality of these waters. The Basin Plan lists and defines the various beneficial water uses; describes the water quality that must be maintained to support such uses; describes the programs, projects, and other actions that are necessary to achieve the standards established within the Basic Plan; and summarizes the various plans and policies that protect water quality.

California Fish and Game Code

California Fish and Game Code Sections 1600–1616 declare that the protection and conservation of the fish and wildlife resources of the state are of utmost public interest. Fish and wildlife are the

property of the people and provide a major contribution to the economy of the state, as well as provide a significant part of the people's food supply; therefore, their conservation is a proper responsibility of the state. Section 1602 requires an entity to notify the CDFW prior to commencing any activity that may do one or more of the following:

- Substantially divert or obstruct the natural flow of any river, stream or lake
- Substantially change or use any material from the bed, channel, or bank of any river, stream, or lake
- Deposit debris, waste, or other materials that could pass into any river, stream, or lake

Stormwater Discharges: Construction General Permit

Under the federal CWA, entities discharging stormwater from construction sites must comply with the conditions of an NPDES permit. SWRCB is the permitting authority in California and has adopted the Construction General Permit that applies to projects resulting in 1 or more acres of soil disturbance. For projects disturbing more than 1 acre of soil, SWRCB requires permittees to prepare a SWPPP. The SWPPP specifies site management activities that permittees or their construction contractors must implement during site development. These management activities include construction stormwater BMPs, erosion and sedimentation controls, dewatering (nuisance-water removal), runoff controls, and construction equipment maintenance.

SWRCB requires permittees to file a Notice of Intent before discharging any stormwater from construction activities and the permittees or their construction contractors to implement and maintain the SWPPP on site. On July 1, 2010, SWRCB Water Quality Order No. 2009-0009-DWQ, NPDES No. CAS000002, the statewide Construction General Permit, superseded the previous statewide Construction General Permit. SWRCB later revised this permit with Order No. 2010-0014-DWQ and Order No. 2012-006-DWQ. The new statewide Construction General Permit implements a risk-based permitting approach, specifies minimum BMP requirements, and requires stormwater monitoring and reporting.

Environmental Setting

The project area occurs in both valleys and along fairly steep slopes along an existing access road in the Calico Mountains. The elevation ranges from roughly 4,540 feet above mean sea level at Calico Peak at the east end to approximately 3,023 feet above mean sea level at the west end adjacent to Fort Irwin Road. The dominant land use in the local vicinity of the study area is undeveloped open space.

Watershed

The study area is within the U.S. Geological Survey Coyote Lake Hydrologic Unit Code 10 (1809020703) and Wall Street Canyon Hydrologic Unit Code 10 (1809020812), as shown on Figure 3.4-1.

Additionally, the eastern portion of the study area is in the South Lahontan Basin, Coyote-Cuddeback Lakes Hydrologic Unit (HU), and an undefined Hydrologic Area and Hydrologic Subarea. The western portion of the study area is within the Mojave HU lower Mojave Hydrologic Area and an undefined Hydrologic Subarea (Figure 3.4-2).

Coyote-Cuddeback Lakes

The Coyote-Cuddeback Lakes HU is a 1,847-square-mile drainage adjacent to the Mojave HU. The watershed is contained by a number of mountain ranges and peaks including Alvord peak, the Tiefort Mountains, and the Granite Mountains. The bottom of the watershed is adjacent to the Barstow Freeway approximately 8 miles southwest of Calico Peak.

Mojave Hydrologic Unit

The Mojave HU encompasses 4,500 square miles and is entirely within San Bernardino County. The Mojave River originates in the San Bernardino Mountains and flows northeast for 120 miles to its terminus in Baker. The river quickly percolates into the sands and recharges the groundwater, making groundwater the primary source of water throughout the watershed.

Water Quality

The project is within the Coyote-Cuddeback Lakes and Mojave HUs, both of which are found within the South Lahontan Basin as defined by the Lahontan RWQCB Basin Plan (Lahontan Regional Water Quality Control Board 1995). The study area contains only unnamed ephemeral drainages.

The Basin Plan designates that minor surface waters within the Lower Mojave and Coyote-Cuddeback Lakes HUs have beneficial uses, as presented in Table 3.4-1 below. None of the delineated features within the study area or any downstream water bodies are 303(d)-listed water bodies.

Table 3.4-1. Beneficial Uses Designated for Hydrologic Units within the Study Area

Hydrologic Unit	Beneficial Uses
Lower Mojave	Agricultural Supply (AGR), Cold Freshwater Habitat (COLD), Ground Water Recharge (GWR), Municipal and Domestic Supply (MUN), Water Contact Recreation (REC-1), Non-contact Water Recreation (REC-2), WARM: Warm Freshwater Habitat (WARM), Wildlife Habitat (WILD)
Coyote	AGR, MUN, GWR, REC-1, REC-2, Commercial and Sportfishing (COMM), WARM, WILD

Delineated Features within the Study Area

A total of 20 drainages were delineated within the study area, totaling 0.65 acre/7,047 linear feet of non-wetland waters of the U.S. and waters of the state and 0.70 acre/7,047 linear feet of CDFW streambed. None of the features meet the criteria for wetlands and, therefore, no wetlands were identified within the study area. These drainages are first- or second-order small streams supporting a defined ordinary high-water mark consisting of shelving, sediment sorting, and a bed and bank. The delineated features are shown in Figures 3.4-3 and 3.4-4.

Several swales and paleo-channels were also observed within the study area and their locations are shown on Figures 3.4-3 and 3.4-4. Paleo-channels are remnants of an inactive drainage that either changed its course or has been filled in with sediment over the years and no longer functions as an aquatic feature. These features are low-volume systems that do not support an ordinary high-water mark or a defined bed and bank, and are colonized by upland vegetation.

All drainages delineated within the study area are non-Relatively Permanent Waters that eventually flow into the Mojave River. Therefore, all drainages delineated are subject to regulation under Sections 404 and 401 of the CWA and CDFW jurisdiction under Sections 1600–1616 of the California Fish and Game Code.

Floodplain

The eastern end of the project area at Calico Peak is not within a Special Flood Hazard Area Zone as mapped by the Federal Emergency Management Agency; however, the remainder of the project area occurs in an area where the flood boundary maps are not printed or available for review. It was assumed that these areas occur in Zone D. According to the Federal Emergency Management Agency, the Zone D designation is used for areas where there are possible but undetermined flood hazards, as no analysis of flood hazards has been conducted.

Groundwater

The Proposed Action is located on the southern edge of the Coyote Lake Valley Groundwater Basin (Groundwater Basin Number 6-37) (DWR 2013). It underlies a northerly trending valley bounded by nonwater-bearing rocks of the Paradise Mountains on the north, the Alvord Mountains on the east, the Calico Mountains to the south, and the Lane Mountains on the west (Lahontan Regional Water Quality Control Board 2004).

3.4.2 Environmental Effects

This section describes the potential effects of implementing the Proposed Action on water resources in the study area. The analysis describes construction effects as well as intermittent and continuous operational effects on surface waters and drainage, groundwater, and floodplains. As mentioned above, the information in this section is based on the 2016 Jurisdictional Delineation Report and the 2016 Calico Peak Utility 33 kV Pole Line Project Waters Impact Assessment prepared by ICF (ICF 2016a, 2016b). As the project would avoid all jurisdictional features, no Jurisdictional Determination was submitted to the U.S. Army Corps of Engineers.

Proposed Action

Surface Waters and Drainage

No streams or rivers would be physically affected by the Proposed Action and no permanent or temporary impacts would occur within jurisdictional waters. Thus, a Section 404, 401, and 1602 permit would not be required for the Proposed Action. However, four project components occur within 20 feet of a jurisdictional water: Pole 4859852E, approximately 11 feet from ID#9; Pole 4859879E, approximately 14 feet from ID#15; Pole 4859880E, approximately 16 feet from ID#16; and Pole 4859882E, approximately 18 feet from ID#7.

Short- and long-term, negligible to minor adverse impacts on water resources could result from ground-disturbing activities undertaken to construct the Proposed Action. Existing access roads would be used during construction, where available, and would not be re-surfaced or re-graded. Between poles 4859880E and 4859886E where an access road does not exist, overland travel is proposed to access these areas. No grading would occur for these temporary access routes.

Soil-disturbing activities (i.e., excavation) can lead to erosion and sedimentation resulting from the exposure of bare soils to stormwater. Bare soils are more likely to erode than vegetated areas that provide infiltration, retention, and dispersion. Surface water quality could be affected by water contaminants generated or inadvertently released during construction (e.g., sediments, fuel, oil). In addition to potential pollutant contributions from disturbed areas, the delivery, handling, and storage of construction materials and wastes, as well as the use of construction equipment, could introduce a risk for stormwater contamination that could affect water quality. Spills or leaks from heavy equipment and machinery can result in oil and grease contamination. Some hydrocarbon compound pollution associated with oil and grease can be toxic to aquatic organisms at low concentrations. Staging areas can also be a source of pollution because of the use of paints, solvents, and cleaning agents during construction. Materials from soil excavation could contain hazardous substances that could be exposed to stormwater. Larger pollutants, such as trash, debris, and organic matter, are also associated with construction activities. Other potential effects include health hazards and aquatic ecosystem damage associated with the introduction of bacteria, viruses, and vectors if waste is not adequately managed.

The small, isolated areas of impervious surfaces associated with the individual pole locations would not generate significant volumes of runoff. Operation of the distribution line would not result in the use or creation of discharge that could violate water quality standards. Construction activities for this project are estimated to disturb an area of less than 1 acre. Any waste water, including stormwater runoff, produced during construction activities would be managed in accordance with the approved SWPPP required for this project. The SWPPP would include BMPs to control erosion and sediment transport to minimize the potential for adverse effects on surface waters, groundwater, and downstream surface water quality. Furthermore, as outlined in the environmental protection measures in Chapter 2, *Proposed Action and Alternatives*, due to the proximity of permanent and temporary impact footprints to jurisdictional waters, the limits of the work areas would be delineated by flags or fencing prior to construction. Additionally, a qualified biologist would monitor all work that occurs near a jurisdictional water to ensure avoidance.

The Proposed Action would not result in significant temporary or permanent increases in water runoff. It would create only minimal areas of impervious surface that could generate new quantities of runoff. The Proposed Action does not include components that would typically generate significant amounts of polluted runoff, such as large paved roads, impervious parking lots, outdoor chemical storage, or other potential sources. Any runoff generated during construction activities would be managed in accordance with a SWPPP, and the Proposed Action would result in no impacts on existing stormwater drainage systems. Once construction activities are complete, the staging areas would be allowed to naturally revegetate. For these reasons, construction and operation of the Proposed Action would not result in significant adverse effects on surface waters and drainage.

Floodplain

Although the majority of the Proposed Action would be within Zone D, which the Federal Emergency Management Agency designates for areas where there are possible but undetermined flood hazards, project components would include installation of relatively small and thin wood poles, down guys, and use of existing dirt and two-track roads. In areas where no established path exists and overland travel is feasible, construction and maintenance crews would avoid vegetation (shrubs) to the extent possible; however, some shrubs would likely be crushed. No blading or grading of any new access roads would occur, and crushed vegetation would be left in place. Construction of the distribution

line and use of the ROW during operational activities would not impede or substantially redirect flood flows should they occur. For these reasons, construction and operation of the Proposed Action would not result in significant adverse effects on floodplains.

Groundwater

The Proposed Action would not require any groundwater extraction during construction or operation. The only permanent impervious surfaces that would be created would be the small footprints of the new poles. Negligible effects on groundwater recharge would occur from the decrease in infiltration of precipitation into soils to recharge groundwater. For these reasons, construction and operation of the Proposed Action would not result in significant adverse effects on groundwater.

No Action Alternative

The No Action Alternative would not result in changes to surface water resources, floodplains, or groundwater. Adverse effects do not currently occur in the existing condition, and no additional adverse effects are anticipated under the No Action Alternative.

3.5 Air Quality

This section provides an analysis of air quality considerations for the Proposed Action and alternatives. The first part of this section describes the affected environment, which includes a discussion of the regulatory setting and the existing air quality in the vicinity of the Proposed Action. The second part of this section identifies the effects related to air quality that would result from implementation of the Proposed Action.

3.5.1 Affected Environment

Regulatory Setting

Air Quality Standards and Existing Concentrations

The federal and state governments have each established their own ambient air quality standards. USEPA has established primary and secondary National Ambient Air Quality Standards (NAAQS) that specify allowable ambient concentrations for criteria pollutants under the provisions of the Clean Air Act (CAA). Primary NAAQS are established at levels necessary, with an adequate margin of safety, to protect the public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Similarly, secondary NAAQS specify the levels of air quality determined appropriate to protect the public welfare from any known or anticipated adverse effects associated with air contaminants. Allowable ambient concentrations are set for ozone (O₃), respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), carbon monoxide (CO), nitrogen dioxide (NO₂), lead (Pb), and sulfur dioxide (SO₂). Table 3.5-1 summarizes the NAAQS for these pollutants.

In California, the California Air Resources Board (CARB), which is part of the California Environmental Protection Agency, has promulgated ambient air quality standards (CAAQS) for O₃, PM₁₀, PM_{2.5}, CO, NO₂, SO₂, and Pb that are more stringent than the USEPA standards, as shown in Table 3.5-1. CARB has also developed standards for sulfates, hydrogen sulfide (H₂S), visibility-reducing particulates, and vinyl chloride.

Counties and metropolitan areas are classified as being in attainment or nonattainment with respect to these federal and state ambient pollutant standards.¹ An area's classification is determined by comparing actual monitored air pollutant concentrations with state and federal standards. More than 200 air monitoring stations are located in California and are part of the State and Local Air Monitoring Network. These stations are operated by CARB, local Air Pollution Control Districts (APCDs) or Air Quality Management Districts (AQMDs), private contractors, and the National Park Service. Areas that do not have sufficient data for a determination are given an "unclassified" designation and are treated by USEPA as being in attainment for regulatory purposes. To further classify the severity of the nonattainment status, the following five subcategories were created: marginal, moderate, serious, severe, and extreme. Some pollutants have fewer subcategories to identify the severity of nonattainment; others have none. The attainment dates for these areas were based upon this classification.

¹ A nonattainment area is any area that does not meet the ambient air quality standards for a pollutant and an attainment area is any area that does meet the ambient air quality standards for a pollutant.

Table 3.5-1. Federal and State Ambient Air Quality Standards

Criteria Pollutant	Average Time	California Standards	National Standards ^a	
			Primary	Secondary
Ozone	1-hour	0.09 ppm	None	None
	8-hour	0.070 ppm	0.070 ppm	0.070 ppm
Particulate Matter (PM ₁₀)	24-hour	50 µg/m ³	150 µg/m ³	150 µg/m ³
	Annual mean	20 µg/m ³	None	None
Fine Particulate Matter (PM _{2.5})	24-hour	None	35 µg/m ³	35 µg/m ³
	Annual mean	12 µg/m ³	12.0 µg/m ³	15 µg/m ³
Carbon Monoxide	8-hour	9.0 ppm	9 ppm	None
	1-hour	20 ppm	35 ppm	None
Nitrogen Dioxide	Annual mean	0.030 ppm	0.053 ppm	0.053 ppm
	1-hour	0.18 ppm	0.100 ppm	None
Sulfur Dioxide	Annual mean	None	0.030 ppm	None
	24-hour	0.04 ppm	0.014 ppm	None
	3-hour	None	None	0.5 ppm
	1-hour	0.25 ppm	0.075 ppm	None
Lead	30-day Average	1.5 µg/m ³	None	None
	Calendar quarter	None	1.5 µg/m ³	1.5 µg/m ³
	3-month average	None	0.15 µg/m ³	0.15 µg/m ³
Sulfates	24-hour	25 µg/m ³	None	None
Hydrogen Sulfide	1-hour	0.03 ppm	None	None
Vinyl Chloride	24-hour	0.01 ppm	None	None

Source: CARB 2016a

Notes:

µg/m³ = micrograms per cubic meter

ppm = parts per million

^a National standards are divided into primary and secondary standards. Primary standards are intended to protect public health, whereas secondary standards are intended to protect public welfare and the environment.

Conformity

USEPA, under the provisions of the CAA, requires each state with regions that have not attained the NAAQS to prepare a State Implementation Plan (SIP) detailing how these standards are to be met in each local area. The SIP is a legal agreement between each state and the federal government to commit resources to improving air quality. It serves as the template for conducting regional and project-level air quality analysis. The SIP is not a single document, but a compilation of new and previously submitted attainment plans, emissions reduction programs, district rules, state regulations, and federal controls.

CARB oversees activities of the APCDs and regional AQMDs. The AQMDs and APCDs promulgate the strategies stated in the SIPs for achieving cleaner air quality on a region-by-region basis. The local AQMD with jurisdiction over the Proposed Action is the Mojave Desert Air Quality Management District (MDAQMD).

CARB also maintains air quality monitoring stations throughout the state in conjunction with local air districts. Data collected at these stations are used by CARB to classify air basins as being in attainment or nonattainment with respect to each pollutant and to monitor progress in attaining air quality standards. The California Clean Air Act requires that each area exceeding the CAAQS for O₃, CO, SO₂, and NO₂ must develop a plan aimed at achieving those standards (California Health and Safety Code 40911 et seq.). The California Health and Safety Code, Section 40914, requires air districts to design a plan that achieves an annual reduction in district-wide emissions of 5 percent or more, averaged every consecutive 3-year period. To satisfy this requirement, the AQMDs and APCDs have to develop and implement air pollution reduction measures, which are described in their Air Quality Attainment Plans/Air Quality Management Plans, and outline strategies for achieving the CAAQS for any criteria pollutants for which the region is classified as nonattainment.

The 1990 Amendment to CAA Section 176 requires USEPA to promulgate rules to ensure that federal actions conform to the appropriate SIP. These rules, known as the General Conformity Rule (40 CFR Parts 51.850–51.860 and 93.150–93.160), require any federal agency responsible for an action in a federal nonattainment or attainment/maintenance area to demonstrate conformity to the applicable SIP, by either determining that the action is exempt from the General Conformity Rule requirements or subject to a formal conformity determination.

Actions that are not exempt are subject to a *de minimis* test, which does not require a conformity determination if the total direct and indirect emissions of nonattainment or maintenance pollutants from the proposed action's construction and operational activities would be less than the specified emission rate thresholds, known as *de minimis* levels.

The Proposed Action is within the Mojave Desert Air Basin (MDAB), which is currently designated as a severe nonattainment area for the 8-hour NAAQS for O₃ and moderate nonattainment for PM₁₀. The project area in the MDAB is in attainment with the NAAQS for the other applicable criteria pollutants. The *de minimis* emission thresholds used in a General Conformity Determination for nonattainment and maintenance pollutants are specifically identified in the General Conformity Rule. The applicable *de minimis* thresholds for the project area are as follows:

- volatile organic compounds (VOCs): 25 tons per year
- oxides of nitrogen (NO_x): 25 tons per year
- PM₁₀: 100 tons per year

Per Section 176(c) of the CAA Amendments of 1990, the lead agency must make a determination of whether the proposed project and project alternatives conform to the SIP. However, if the total direct and indirect emissions from the proposed project are below the General Conformity Rule *de minimis* emission levels, then the proposed project would be considered exempt from performing a comprehensive General Conformity Analysis and Determination and would be considered conforming to the SIP. Otherwise, it has to be shown that the proposed project would not conflict with the goals and objectives of the SIP.

Mojave Desert Air Quality Management District

MDAQMD had developed a Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Non-attainment Area) and is currently in the process of updating its PM₁₀ Attainment & Maintenance Plan to address the nonattainment designations for O₃ and PM₁₀. The PM₁₀ Ozone Attainment Plan

was adopted in June 2008 with a target attainment date of 2021, and the most recent PM10 attainment plan was adopted in July 1995 and had an attainment date of 2000.

MDAQMD has developed numerous rules for the purposes of regulating regional air quality, covering such topics as review procedures, technological requirements, prohibitions of visible emissions and nuisance, and minimization of fugitive dust emissions. MDAQMD Rule 403, with which the Proposed Action would be required to comply, minimizes emissions of fugitive dust from any transport, handling, construction, or storage activity so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source.

Environmental Setting

Local Air Quality

The ambient criteria pollutant monitoring station closest to the project site is in Barstow, approximately 11 miles to the southwest of the nearest construction activities. Because not all criteria pollutants are monitored at this location, the PM2.5 ambient air quality data from the Victorville monitoring station, which is over 40 miles southwest of the project site, are also provided. Table 3.5-2 summarizes the measured criteria pollutant concentrations over the past 3 years at these stations. The measured local concentrations and the health effects and other characteristics of O₃, PM10, PM2.5, and NO₂ are discussed below. Lead, CO, SO₂, sulfates, and H₂S are of less concern in the project area because levels are below standards and no major sources of these pollutants exist in the project area. As shown in Table 3.5-2, O₃, PM10, and PM2.5 concentrations have exceeded federal and state ambient air quality standards.

Table 3.5-2. Ambient Air Quality Monitoring Data from the Barstow (CARB 36155) and Victorville – 14306 Park Avenue (CARB 36306) Monitoring Stations

Pollutant Standards	2013	2014	2015
1-Hour Ozone			
Maximum 1-hour concentration (ppm)	-	-	-
Number of days standard exceeded ^a			
CAAQS 1-hour (> 0.09 ppm)	-	-	-
8-Hour Ozone			
National maximum 8-hour concentration (ppm)	0.092	0.087	0.082
National second-highest 8-hour concentration (ppm)	0.086	0.085	0.079
State maximum 8-hour concentration (ppm)	0.093	0.087	0.083
State second-highest 8-hour concentration (ppm)	0.087	0.086	0.080
Number of days standard exceeded ^a			
NAAQS 8-hour (> 0.075 ppm)	10	17	5
CAAQS 8-hour (> 0.070 ppm)	31	37	20
Carbon Monoxide (CO)			
National ^b maximum 8-hour concentration (ppm)	-	-	-
California ^c maximum 8-hour concentration (ppm)	-	-	-
Number of days standard exceeded ^a			
NAAQS 8-hour (≥ 9 ppm)	-	-	-
CAAQS 8-hour (≥ 9.0 ppm)	-	-	-

Pollutant Standards	2013	2014	2015
Nitrogen Dioxide (NO₂)			
Maximum National 1-hour Concentration (ppm)	0.0849	0.0693	0.0613
Maximum State 1-hour Concentration (ppm)	0.084	0.069	0.061
Annual Average Concentration (ppm)	-	0.016	0.015
Number of days standard exceeded^a			
CAAQS 1-Hour Standard (0.18 ppm)	0	0	0
NAAQS 1-Hour Standard (100 ppb)	0	0	0
Particulate Matter (PM₁₀)^d			
National ^b maximum 24-hour concentration (µg/m ³)	87.1	305.8	145.5
National ^b second-highest 24-hour concentration (µg/m ³)	53.0	126.2	121.6
State ^c maximum 24-hour concentration (µg/m ³)	85.6	-	-
State ^c second-highest 24-hour concentration (µg/m ³)	48.8	-	-
State annual average concentration (µg/m ³) ^e	-	-	-
Number of days standard exceeded^a			
NAAQS 24-hour (> 150 µg/m ³) ^f	0	1	0
CAAQS 24-hour (> 50 µg/m ³) ^f	1	-	-
Particulate Matter (PM_{2.5}) – Victorville – Park Avenue Monitoring Station (CARB Station No. 36306)			
National ^b maximum 24-hour concentration (µg/m ³)	13.1	24.1	50.2
National ^b second-highest 24-hour concentration (µg/m ³)	11.8	24.1	31.9
State ^c maximum 24-hour concentration (µg/m ³)	13.8	24.1	50.1
State ^c second-highest 24-hour concentration (µg/m ³)	12.7	24.1	32.3
National annual designation value (µg/m ³)	-	-	-
National annual average concentration (µg/m ³)	-	-	6.6
State annual designation value (µg/m ³)	-	-	6
State annual average concentration (µg/m ³) ^e	-	-	6.4
Number of days standard exceeded^a			
NAAQS 24-hour (> 35 µg/m ³)	0	0	1
NAAQS Annual (> 12.0 µg/m ³)	-	-	-

Source: CARB 2016b

Notes:

µg/m³ = micrograms per cubic meter; ppm = parts per million; – = insufficient data available to determine the value.^a An exceedance is not necessarily a violation.^b National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.^c State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.^d Measurements usually are collected every 6 days.^e State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.^f Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored.

Below are brief descriptions of the air pollutants regulated by federal and state agencies.

Ozone

O₃ is a colorless gas that has a pungent odor and causes eye and lung irritation, visibility reduction, and crop damage. A primary constituent of smog, O₃ is formed in the atmosphere in the presence of sunlight by a series of chemical reactions involving NO_x and reactive organic gases/VOCs. Because these reactions occur on a regional scale, O₃ is considered a regional air pollutant. Industrial fuel combustion and motor vehicles are primary sources of NO_x and reactive organic gases. The MDAB is designated as a nonattainment area for O₃.

Particulate Matter

Particulate matter is generally composed of particles in the air such as dust, soot, aerosols, fumes, and mists. Of particular concern are inhalable particulates that have aerodynamic diameters of 10 micrometers or less (PM₁₀). A subgroup of these particulates is fine particulates (particles with aerodynamic diameters less than 2.5 micrometers, PM_{2.5}), which have very different characteristics, sources, and potential health effects than coarse particulates (particles with aerodynamic diameter between 2.5 to 10 micrometers). Coarse particulates are generated by sources such as windblown dust, agricultural fields, and dust from vehicular traffic on unpaved roads.

PM_{2.5} is generally emitted from activities such as industrial combustion, vehicle exhaust, and residential wood-burning stoves and fireplaces. PM_{2.5} is also formed in the atmosphere when gases such as SO₂, NO_x, and VOCs emitted by combustion activities are transformed by chemical reactions in the air. PM₁₀ affects breathing and the respiratory system, and, in particular, can damage lung tissue and contribute to cancer and premature death. Separate standards for PM_{2.5} were established in 2012 because these smaller particles can penetrate deep into the respiratory tract and cause their own unique adverse health effects. Very small particles of substances, such as lead, sulfates, and nitrates, can cause lung damage directly. These substances can be absorbed into the blood stream and cause damage elsewhere in the body; they can also transport absorbed gases such as chlorides or ammonium into the lungs and cause injury.

Measured concentrations at the monitoring stations have each exceeded the federal 24-hour PM₁₀ standard and 24-hour PM_{2.5} standard one time over the past 3 years. These measured concentrations have contributed to the project area being classified as nonattainment for the federal PM₁₀ and state PM_{2.5} standards.

Carbon Monoxide

CO is an odorless, colorless gas that can impair the transport of oxygen in the bloodstream; aggravate cardiovascular disease; and cause fatigue, headache, confusion, and dizziness. CO forms through incomplete combustion of fuels in vehicles, wood stoves, industrial operations, and fireplaces. CO tends to dissipate rapidly into the atmosphere and consequently is generally a concern at the local level, particularly at major road intersections.

CO concentrations in the MDAB have been below federal and state 1-hour and 8-hour average standards. As such, the MDAB is classified as attainment for the CO standards.

Nitrogen Dioxide

NO₂ is a brownish, highly reactive gas that can irritate the lungs, cause pneumonia, and lower the resistance to respiratory infections. NO_x, which includes NO₂, is a key precursor to O₃ and acid rain.

NO_x forms when fuel is burned at high temperatures, and principally comes from transportation sources and stationary fuel combustion sources such as electric utility and industrial boilers.

Table 3.5-2 shows that measured concentrations of NO₂ in the project vicinity have consistently remained well below the federal and state standards. As such, the MDAB is designated as attainment for state and federal standards.

Sulfur Dioxide

SO₂ is a colorless gas with a strong odor. High concentrations of SO₂ affect breathing and may aggravate existing respiratory and cardiovascular disease. SO₂ is also a primary contributor to acid deposition, which causes acidification of lakes and streams and can damage trees, crops, building materials, and statues. In addition, sulfur compounds in the air can contribute to visibility impairment. The major source category for SO₂ is fuel-burning equipment combusting fossil fuels. The MDAB is designated as attainment for federal and state SO₂ standards.

Toxic Air Contaminants

Non-criteria air pollutants, or toxic air contaminants (TACs), are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, motor vehicles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes approximately 200 compounds, including particulate emissions from diesel-fueled engines and asbestos.

Asbestos is a type of fibrous mineral used in construction materials including cement pipe. Over time, exposure to friable asbestos can lead to health problems including asbestosis, lung cancer, and mesothelioma, a form of lung cancer uniquely attributed to long-term exposure to airborne asbestos. Exposure to asbestos is hazardous via inhalation.

Diesel particulate matter is the most complex of diesel emissions. Diesel particulates, as defined by most emission standards, are sampled from diluted and cooled exhaust gases. This definition includes both solids and liquid material that condenses during the dilution process. The basic fractions of diesel particulate matter are elemental carbon, heavy hydrocarbons derived from the fuel and lubricating oil, and hydrated sulfuric acid derived from the fuel sulfur. Diesel particulate matter contains a large portion of the polycyclic aromatic hydrocarbons found in diesel exhaust. Diesel particulates include small nuclei mode particles of diameters below 0.04 micrometers (μm) and their agglomerates of diameters up to 1 μm. Ambient exposures to diesel particulates in California are significant fractions of total TAC levels in California.

3.5.2 Environmental Effects

Proposed Action

Construction

During the construction period, the use of equipment and vehicles would entail the incomplete combustion of fossil fuels, which would result in emissions of criteria pollutants, including NO_x, PM₁₀, PM_{2.5}, and CO. In addition, the use of construction vehicles on roadways, particularly those

that are unpaved, would result in fugitive dust (PM₁₀ and PM_{2.5}).² As discussed in Chapter 2, each pole would require an excavation of approximately 3 feet in diameter and between 6 and 10 feet deep to allow for the installation of poles as well as minor grade leveling with hand tools. The area of soil disturbance would be limited to a radius of 5–10 feet around the poles as well as light disturbance (primarily overland vehicle travel) within a general 25-foot radius around each pole. Excavated holes would be backfilled with excavated soil and the Proposed Action would not require import or export of soil. For those locations inaccessible by truck, the poles would be delivered and installed using helicopters. In addition, a helicopter would be used to string the conductor. Construction staging would occur at the Barstow-Daggett Airport for helicopter staging and fueling, at three locations close to the proposed alignment.

There are no residents living close to the locations where project components would be installed; therefore, there would be negligible exposure of residents to construction-period pollutant emissions. With respect to regional pollutants, the type of work that would be done would involve no import or export of soil, and emissions would primarily be associated with the vehicles and helicopters used to bring the crews, equipment, poles, and conductors. Based on the limited scope and duration of construction activities, emissions are not expected to exceed the General Conformity thresholds, and no exceedance of the NAAQS or CAAQS would occur.

Operation

The Proposed Action would involve the installation of poles and conductors to serve the communication facility at the top of Calico Peak, which is currently powered by a diesel generator. As a result of the electrification of the communication facility, criteria pollution emissions within the MDAB and the immediate vicinity of the Proposed Action would likely fall marginally, as not all emissions would occur at the site of the Proposed Action, but would occur at SCE power generation facilities. The power requirements of the Proposed Action would be met without a substantial increase in fuel combustion at these power generation facilities such that criteria pollutant emissions would not increase significantly elsewhere.

The Proposed Action would require fewer vehicle trips to the communication facility, as diesel fuel would no longer be required for regular operational activities, which would reduce pollutant emissions associated with these trips. There would be routine line patrols conducted from a patrol vehicle traveling on existing access roads or trails, but may also include staff walking into a location. Ground patrols of all equipment are required one time per year, but may occur more frequently based on system reliability and local conditions. Such patrols would generate criteria pollutant emissions from vehicle fuel combustion, as well as fugitive dust emissions from entrained dust on dirt roadways. Emissions would not exceed the General Conformity thresholds, and no exceedance of the NAAQS or CAAQS would occur.

² Significant atmospheric dust arises from the mechanical disturbance of granular material exposed to the air. Dust generated from these open sources is termed “fugitive” because it is not discharged to the atmosphere in a confined flow stream. Common sources of fugitive dust include unpaved roads, agricultural tilling operations, aggregate storage piles, and heavy construction operations.

No Action Alternative

Under the No Action Alternative, there would be no construction-period pollutant emissions, as no construction activities would be undertaken. There would continue to be emissions associated with the use of the diesel-powered generator, however.

3.6 Cultural Resources

This section describes the impacts related to cultural resources within the study area that would result from the construction and operation of the Proposed Action. A cultural resource is considered to be any building, structure, object, site, landscape, or district associated with human manipulation of the environment. Such resources are often valued by a particular group of people (monetarily, aesthetically, or religiously), and can be historic in character or date to the prehistoric past (i.e., the time prior to written records). The information presented in this section is based on the results of the records review and cultural resources survey performed for the Proposed Action, which is described in detail in the project's cultural resources technical report (ICF 2016)

3.6.1 Affected Environment

The cultural resources study area includes a 76-meter corridor that centers on a proposed 4.43-mile-long, 33 kV overhead distribution line. Approximately 3.01 miles of the alignment would be on BLM lands and 1.42 miles would be on DOD lands. In total, the cultural resources study area encompasses 134.2 acres—approximately 91.2 of which would be on BLM lands and 43 of which would be on DOD lands. The line originates in Fort Irwin Road and continues to a communication tower at the top of Calico Peak in the Calico Mountains. A cultural resources records search, literature review, and pedestrian survey were performed for the Proposed Action and are summarized below.

Regulatory Setting

Section 106 of the National Historic Preservation Act (36 CFR §800)

Projects considered federal undertakings are subject to compliance with Section 106 of the National History Preservation Act. Section 106 of the act requires that, before beginning any undertaking, a federal agency must take into account the effects of the undertaking on historic properties, or cultural resources listed in or eligible for listing in the National Register of Historic Places (NRHP), and afford the Advisory Council on Historic Preservation an opportunity to comment on these actions. Specific regulations regarding compliance with Section 106 state that, although the tasks necessary to comply with Section 106 may be delegated to others, the federal agency is ultimately responsible for ensuring that the Section 106 process is completed according to statute. The Section 106 process has four basic steps:

1. Initiation of the Section 106 process.
2. Identification of historic properties within the area of potential effects.
3. Assessment of adverse effects on historic properties.
4. Resolution of adverse effects on historic properties.

Significance Criteria

To determine whether an undertaking could affect historic properties, cultural resources (including archaeological, historical, and architectural properties) must be inventoried and evaluated for listing in the NRHP.

For projects involving a federal agency, cultural resource significance is evaluated in terms of eligibility for listing in the NRHP. For a property to be considered for inclusion in the NRHP, it must be at least 50 years old and meet the criteria for evaluation set forth in 36 CFR Part 60.4, as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of design, setting, materials, workmanship, feeling, and association and:

- a. That are associated with events that have made a significant contribution to the broad patterns of our history; or
- b. That are associated with the lives of persons significant in our past; or
- c. That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master or that possess high artistic values or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d. That have yielded, or may be likely to yield, information important in prehistory or history.

Resource Integrity and Adverse Effects

Eligibility for listing in the NRHP requires that a resource not only meet one of the significance criteria listed above but also possess integrity. Integrity is the ability of a property to convey its significance. The evaluation of a resource's integrity must be grounded in an understanding of that resource's physical characteristics and how those characteristics relate to its significance. An adverse effect on a historic property is found when an activity may alter, directly or indirectly, any of the characteristics of the historic property that render it eligible for inclusion in the NRHP. The alteration of characteristics is considered an adverse effect if it diminishes the integrity of the historic property's location, design, setting, materials, workmanship, feeling, or association. The assessment of effects on historic properties is conducted in accordance with the guidelines set forth in 36 CFR 800.5. Adverse effects on historic properties include, but are not limited to:

- Physical destruction of or damage to all or part of the property.
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68) and applicable guidelines.
- Removal of the property from its historic location.
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.
- Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization.

- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

Cultural Setting

Prehistoric Context

The study area is within the Central Mojave Desert ecosystem. Numerous cultural chronologies have been developed for this region. The setting provided below is a summary of some of these chronologies into an overview of regional cultural trends over time. This setting divides the pre-contact cultural sequence into three periods. These periods are analytical constructs and do not necessarily reflect Native American views.

Paleo-Indian Period

Scholarly theory suggests that the earliest human occupants of North America were highly mobile terrestrial hunters. Paleo-Indian cultures (e.g., Clovis, Folsom, Llano) dating to this period are often marked by archaeological assemblages of bone and stone technology. Over the last few decades, several North American archaeological sites and sets of human remains have been documented in various contexts that date to this Paleo-Indian Period. These discoveries have required researchers to reconsider the migratory and land-use strategies of early man within the Americas. Within California, Paleo-Indian assemblages are characterized by a wide but sparse distribution of isolated tools and caches dated to between 12,000 and 10,000 years before present (BP).

In the Central Mojave Desert of California, several sites have been identified with Paleo-Indian components. There have been numerous archaeological inventories that have located and reported fluted points within reasonable proximity to the Proposed Action location. Fort Irwin and its ongoing cultural resources program have recorded numerous Paleo-Indian sites. There are ongoing studies around Lake Mojave that continue to add to the inventory of Paleo-Indian resources. Soda Springs also has well-documented evidence of Paleo-Indian activities. Although there have been no Paleo-Indian sites documented in the study area, the absence of sites does not negate the presence of human occupants during this period.

Archaic Period

Evidence of long-term human occupation of the Mojave and Colorado Desert regions begins to appear at around 11,000 BP in the form of lithic assemblages consisting of scrapers, scraper planes, cobble choppers, large blades, and projectile points. These items are attributed to a cultural complex referred to as the Lake Mojave Culture. Based on the range of artifact types, artifact frequency, and distribution of archaeological sites, the people of this culture are thought to have used a generalized terrestrial hunting and gathering land-use strategy focused around seasonal patterns. Lake Mojave Complex sites have been recorded at Fort Irwin and Lake Mojave. Between 8000 and 4000 BP, a new cultural complex identified as the Pinto Culture also begins to appear in the archaeological record. The Pinto complex, named for its unique triangular notched stone projectile points, is thought to have developed out of a similar cultural tradition as the Lake Mojave complex. The Pinto complex marks the end of the Lake Mojave complex, although both are congruently practiced for an undetermined overlap of time.

Little evidence exists to link the Pinto Culture to those of the Archaic Period who developed more diversified strategies for hunting and gathering. This may in part be attributed to a decrease in available water sources; researchers postulate that as the inland Pleistocene lakes began to dry out, Paleo-Indian people migrated away from these basins—many into coastal areas.

Late Prehistoric Period

Starting at around 1500 BP, the archaeological record reflects increased diversity in the types and distribution of archaeological sites relative to previous time periods. The range and spatial distribution of site types as well as site constituents are thought to reflect the ethnographically observed lifeways of the Chemehuevi, Mojave, and Serrano peoples. All three appear to have developed land-use patterns around the intensive exploitation of a range of local resources and established semi-permanent camps and villages. All groups also adopted the use of small projectile points, pottery, basketry, and cache storage.

Archaeological sites attributed to the Serrano are characterized by a range of artifact types, including mortars and pestles, manos and metates, flaked stone tools, ceramics, basketry and other woven textiles, and cremations. Archaeological sites attributed to the Chemehuevi are also found with a similar range of artifact types but with fewer ceramics and with basketry with painted instead of woven designs.

Ethnographic Context

The study area is in the vicinity of the traditional lands of the Vanyume division of the Serrano people. The full range of the Vanyume territory is poorly known, but is thought to have at least extended from the Mojave River sink to the east to the Barstow vicinity in the west. The Chemehuevi and Mojave also inhabited lands in the vicinity of the study area. While the Chemehuevi and Mojave had hostile relations with other divisions of the Serrano people, they appeared to have had friendly relations with the Vanyume.

The Chemehuevi and Serrano people spoke dialects of the Uto-Aztecan language family, while the Mojave spoke a dialect of the Yuman language family. The close proximity of these groups, as well as established trade networks through the region, indicate that cultural practices of these groups were likely exchanged and adopted well before the arrival of Europeans. The people of the region relied on seasonal subsistence systems and, because of this, would have made use of temporary and/or seasonal campsites as well as permanent village and preparation sites. Common plant and animal resources used by these groups included mesquite beans, seeds, palms, and cactus as well as wild game such as antelopes, rabbits, squirrels, quails, ducks, and geese, among others.

At least one Vanyume settlement is known to have existed along the Mojave River somewhere between Camp Cady and Daggett, several miles south of the study area. A review of the publicly available literature revealed no other documented ethnographically named places in the study area vicinity. However, consultation with Native American tribes may produce information about as-yet undocumented ethnographically named places.

Historic Context

Spanish and Mexican Periods

Spanish occupation of California began at San Diego in 1769, when Franciscan missionaries led by Fr. Junípero Serra and Spanish soldiers led by Gaspar de Portolá established a military fort and a chapel on Presidio Hill, which became colonial California's first mission and presidio. Over the next half century, colonists created a chain of 21 missions, four presidios, and three pueblos across coastal Alta California. No Spanish missions or mission-associated institutions farther inland, such as estancias (ranch outposts) or asistencias (small-scale missions that lacked a resident priest), were established in the vicinity of the study area. The nearest Spanish-era institution was Mission San Gabriel's Guachama Rancho (or San Bernardino Asistencia). This mission was established in 1810, and was approximately 70 miles southwest of the study area in the San Bernardino Valley. Documented Spanish activity in the Mojave Desert region remained limited to expeditions led by Father Francisco Garcés beginning in 1776, although miners may have undertaken undocumented prospecting expeditions into the region during the Spanish Period. Traveling trails used by Native Americans, Garcés established the Mojave Trail through the region for use by Euro-Americans.

During the decade following 1821, when Mexico won independence from Spain, most Spanish laws and practices continued, while economic activity in Southern California centered on agriculture and livestock-raising for subsistence and localized markets, and hide and tallow production for the international market. The systematic dismantling of the mission system began with the Secularization Proclamation of 1834. Mission lands reserved for Christianized Native Americans under Spanish law were carved up and increasingly granted along with other productive land to politically connected civilians among the Hispanic Californio population, and to some newcomers who became Mexican citizens. No ranchos were granted in the vicinity of the study area; travel continued to be the primary Euro-American activity in the study area vicinity during the Mexican period. Beginning in 1827, fur trapper Jedediah Smith made multiple trips into California on the Mojave Trail and through Cajon Pass, both located to the south of the study area. Subsequent to Smith, Kit Carson and other trappers traveled the route. Around that time, the Mojave Trail became part of the Old Spanish Trail (or Santa Fe Road) between Southern California and Santa Fe. By the end of the Mexican period in the late 1840s, travelers from Salt Lake City had also established the Mormon Trail into Southern California via Las Vegas, which passed west of the study area and met up with the Old Spanish Trail north of Cajon Pass.

American Period

Two years after the 1848 Treaty of Guadalupe Hidalgo, California became the Union's thirty-first state, and miners began exploring the mountain and desert regions of Southern California over the next two decades. During the 1850s, the Corps of Topographical Engineers of the U.S. Army and U.S. General Land Office began to conduct surveys of the region. During that decade, as mining activity slowed in the Mother Lode region of the Sierra Nevada, miners began to explore the Mojave Desert in search of mineral resources. In 1863, J. W. Searles undertook the first Borax production in the Mojave at the dry lake that would become known as Searles Lake, located approximately 50 miles northwest of the study area. Camp Cady was established along the Mojave River in 1868, and over 100 soldiers stationed there policed the stage and mule-train road linking Arizona to the Los Angeles-area port at Wilmington. Railroad travel came to the study area vicinity during the 1880s. The Southern Pacific Railroad had completed its main line linking the San Joaquin Valley to the Los Angeles area via Tehachapi Pass during the mid-1870s, and by 1883 had completed a line from

Mojave to the Colorado River. The latter line through the desert was acquired by the Atchison, Topeka and Santa Fe Railway in 1884, which extended a new line from Barstow to San Bernardino in 1885.

The Southern Pacific Railroad and the Atchison, Topeka and Santa Fe Railway arrived in the region amid a mining boom that occurred in the Calico Mountains during the 1880s. Prospected sparsely in the 1860s, the number of claims in the Calico Mountains increased rapidly in the latter part of the nineteenth century, with approximately 100 silver claims by the end of 1880. The following year, a group of prospectors led by Hues Thomas and Tom Warden discovered and began developing the Silver King mine—one of the largest mines in the region. By 1888, the mines of Calico Mountain produced the majority of the silver mined in San Bernardino County and nearly 70 percent of the silver produced in California.

As a result of the influx of people into the region, the town of Calico took shape at the southern end of the Calico Mountains approximately 6 miles north of Daggett. At the region's height of silver production in the late 1880s, Calico had 170 stamp mills in operation. Estimates of Calico's highest population during this time ranged from 3,500 to 5,000 people. When the market for silver crashed in the 1890s, Calico's population rapidly dwindled. By the late 1920s, only a handful of miners continued to reside there and work the remains of the best strikes. Calico would eventually become a ghost town tourist attraction, while Waterman—another mining town that took shape along the railroad east of Calico during the 1880s—would be renamed Barstow and become the largest population center in the study area vicinity.

To the chagrin of miners in the region, the U.S military identified today's Fort Irwin as a location for military training in 1938. In 1940, the federal government designated it as the Mojave Anti-Aircraft Range. In 1942, the site was renamed Camp Irwin in honor of World War I artillery commander Major General LeRoy Irwin. Numerous troops trained there during World War II. Deactivated in 1945 at the close of World War II, Camp Irwin was reactivated in 1951 as a result of the Korean War and became the site of long-term military development. It was named Fort Irwin in 1961 and became a permanent military installation. Ten years later, the federal government converted Fort Irwin to a National Guard training center.

At some point during the early twentieth century, the Barstow-Silverlake road, an unimproved and unpaved road, was established along the western edge of the study area to establish a short and practical transportation corridor between Barstow and the settlements to the northeast through Pickhandle Pass. The road is thought to have followed the path of older wagon roads in the area. The road was improved and paved in the 1940s with Works Progress Administration funding in order to provide a route between Barstow and Fort Irwin that was adequate for the use of large trucks. At that time, the road was renamed to Fort Irwin Road. Other than the development and improvement of Fort Irwin Road, limited activity aside from recreational use has occurred within the study area during the twentieth and twenty-first centuries.

Records Review and Pedestrian Survey Results

Records Review

On May 19, 2016, ICF staff conducted a cultural resources records search at the South Central Coastal Information Center at California State University, Fullerton. The South Central Coastal Information Center is part of the California Historical Resources Information System, which serves

as the repository for cultural resources records in the state of California. The records search was undertaken to identify previously documented archaeological, historic, and architectural resources and previous studies in and within a half-mile of the study area. The results of these records searches are presented below.

A total of six cultural resources studies have been conducted within a half-mile radius of the study area (Table 3.6-1), all of which have occurred within at least a portion of the study area. The oldest of these was performed in 1979 and the most recent in 2013. All but one of the studies were performed more than 5 years before the current study and covered only small portions of the study area. The remaining study was provided to ICF after the pedestrian survey was completed. Therefore, no portions of the study area were omitted from the pedestrian survey.

Table 3.6-1. Previous Studies in the Study Area and 0.5-Mile Record Search Boundary

Study	Year	Author	Title	In Study Area
SB-00822/ 1060822	1979	Sutton, Mark	Cultural Resources Assessment, Calico Peak Transmission Site	Yes
SB-01106/ 1061106	1981	Reynolds, Robert	Irwin Road Improvement, Cultural Resource Assessment, San Bernardino County, California	Yes
SB-02998/ 1062998	1994	Baker, Suzanne	Cultural Resources Study of the Fort Irwin Defense Access Road, CA-A-AD-73(1), San Bernardino County, CA	Yes
SB-06166/ 1066166	2003	Duke, Curt and Fulton, Terri	Archaeological Survey Report: Remote Circuit, Southern California Edison, San Bernardino County, California	Yes
SB-06261/ 1066261	2003	Lerch, Michael and Majewski, Teresita	Historic Property Survey Report for the Fort Irwin Road Project, from Interstate 15 to the Southerly Boundary of the National Training Center, Fort Irwin, San Bernardino, County, California	Yes
*NA	2013	Tan, Ballester, Goodman, and Shaker	Class III Cultural Resources Inventory: Calico Peak Utility Pole Line Project, Barstow-Calico Area, San Bernardino County, California	Yes
*Provided by BLM				

Eight cultural resources have been documented within a half-mile radius of the study area. Of these, two have portions located within the study area. One (P-36-064546) is an unimproved road that lies outside the study area, but served as the only access route into the study area during the pedestrian survey. One (P-36-004525/H) is a segment of the historic Barstow-Silverlake Wagon Road, and crosses the study area at the western edge of the alignment. Each of the resources within a half-mile radius of the study is briefly summarized in Table 3.6-2, and detailed descriptions of the two previously recorded resources located within and directly adjacent to the study area are provided below.

Table 3.6-2. Previously Recorded Resources in the Project Vicinity

Site #	Recorded By	Year	Description	Eligibility Status	Within Study Area
P-36-004525/ SBR-4525/H	Reynolds, Robert	1981	Barstow-Silverlake Wagon Road Segment	Not eligible for NRHP or CRHR.	Yes
P-36-010892/ SBR-10892/H	Statistical Research Inc.	2001	Mining test pits	Not eligible for NRHP; not evaluated for CRHR.	No
P-36-010893/ SBR-10893/H	Statistical Research Inc.	2001	Fort Irwin Communication Line	Not eligible for NRHP; not evaluated for CRHR.	No
P-36-010894/ SBR-10894/H	Statistical Research Inc.	2001	Southern California Edison Power Line	Not eligible for NRHP; not evaluated for CRHR.	No
P-36-025950/ SBR-16421/H	CRM Tech	2013	Mining test pit	Not eligible for NRHP or CRHR.	No
P-36-064546	Statistical Research Inc.	2001	Dirt Road	Not eligible for NRHP; not evaluated for CRHR.	Adjacent
P-36-064547	Statistical Research Inc.	2001	Mining test pit	Not eligible for NRHP; not evaluated for CRHR.	No
P-36-064548	Statistical Research Inc.	2001	Mining test pit	Not eligible for NRHP; not evaluated for CRHR.	No

P-36-004525/CA-RIV-4525/H

Site P-36-004525 is the historic Barstow-Silverlake Road, which has been in use since 1909. The site was originally documented by Robert E. Reynolds in 1981, updated in 1994, and revisited in 2013. The road has been realigned and paved, and intact portions of the original alignment are visible adjacent to the modern paved road (Fort Irwin Road) in some areas. The alignment was previously evaluated for its eligibility for listing in the NRHP and California Register of Historical Resources (CRHR), and was determined not eligible for listing in either register. A portion of the site was revisited in 2013, with no proposed change to the NRHP eligibility status of the site.

P-36-064546

Site P-36-064546 was recorded in 2001 by Statistical Research Inc. and was revisited in 2013 by CRM Tech. The site is described as a moderately developed dirt road located on the east side of Fort Irwin Road. No age or significant association was determined at the time of its recordation. The site was determined not eligible for listing in the NRHP in 2001. The site was revisited in 2013, with no proposed change to the NRHP eligibility status of the site.

Pedestrian Survey

ICF archaeologists conducted an intensive pedestrian survey of the study area. Approximately 80 percent (110 acres) of the surveyed area was covered during the pedestrian survey, and ground visibility (90 to 100 percent) was excellent across the entire surveyed area. Much of the study area consisted of gently to moderately sloping decomposing bedrock hills occasionally incised by small drainages. The westernmost margin of the study area was a broad and gently sloping alluvial fan

with occasional exposures of decomposing bedrock. The remaining 20 percent of the study area was located on very steep slopes, defined here as being greater than 30 degrees. While such areas typically possess low archaeological sensitivity, they were visually inspected from a distance to determine if any historic or prehistoric features were present.

The pedestrian survey relocated P-36-064546 and identified two previously undocumented historic-era archaeological sites and four previously undocumented isolates (two historic era, two prehistoric). The pedestrian survey did not relocate P-36-04525 within the study area and the reasons for this are described in greater detail below. In addition to the resources described above, the survey identified, but did not record, several modern and non-diagnostic can and bottle fragments within the study area. The resources are discussed in greater detail and include preliminary evaluation recommendations for the NRHP. These recommendations are summarized in Table 3.6-3.

P-36-004525/CA-RIV-4525/H

This site, the historic Barstow-Silverlake Road, was previously documented as being located within the study area. The road has been realigned and paved, and intact portions of the original alignment are visible adjacent to the modern paved road (Fort Irwin Road) in some areas. The pedestrian survey did not identify any clearly visible ruts or other indicators of an unimproved road on either side of Fort Irwin Road within the study area. Therefore, it is considered likely that construction of the current Fort Irwin Road alignment, and its associated grading slopes, destroyed any features or infrastructure associated with the original road within the study area. However, faint two-track alignments paralleling the southeastern margin of Fort Irwin Road were observed outside, and to the northeast and southwest, of the study area where grading slopes were small or absent. These alignments are considered likely to be remnants of the historic Barstow-Silverlake Road. The site was previously determined not eligible for listing in the NRHP, and no new information was collected during the 2016 survey that would warrant revisiting these determinations.

P-36-064546

This site, an unimproved road segment, was previously documented adjacent to the study area. No age or significant association was determined at the time of its recordation. The road segment was relocated during the 2016 pedestrian survey, was found to be in the same condition as was previously described, and unrecorded portions of the road intersect with the study area in several locations. However, a review of historic aerial photographs revealed that the road appears to have been established at some point between 1970 and 1995—less than 50 years ago. Therefore, no further documentation of the additional segments that intersect with the study area was performed. Based on this information, the site was previously determined not eligible for listing in the NRHP.

ICF-NC-001

This site is on a ridge above a northwest to southeast-trending drainage and consists of a circular depression 3 meters in diameter by approximately 0.6 meter in depth. A deflated ring of sediment is present around the pit, and natural filling of the basin was observed. Three shrubs have taken root in the basin, as well. The pit had no diagnostic attributes or associated artifacts, but it is considered likely to be associated with mining activities in the region. The site does not convey an important association with a significant historical event, trend, or person (NRHP Criteria A and B) and does not appear to embody a characteristic or method of construction that would warrant special recognition

(NRHP Criterion C). The site has no archaeological contents; therefore, no information that can further contribute to our understanding of history can be obtained through its analysis (NRHP Criterion D).

ICF-NC-002

This site is within an incised northwest to southeast-trending drainage, and consists of a 1-meter by 1-meter concentration of approximately 25 colorless glass insulators, plus additional sparsely distributed insulators 10 meters downstream (northwest) of the concentration. In total, the site is approximately 11 meters (northwest-southeast) by 3 meters (northeast-southwest) in size. The insulators were manufactured by Hemingray between 1950 and 1960, and were commonly used for rural telephone lines. The site does not convey an important association with a significant historical event, trend, or person (NRHP Criteria A and B) and does not appear to embody a characteristic or method of construction that would warrant special recognition (NRHP Criterion C). The site has no archaeological contents; therefore, no information that can further contribute to our understanding of history can be obtained through its analysis (NRHP Criterion D).

Preliminary Evaluation Recommendation

Both of the previously documented sites (P-36-004525/CA-RIV-4525/H and P-36-064546) were previously determined not eligible for the NRHP. The newly identified sites (ICF-NC-001 and ICF-NC-002) are also recommended not eligible for listing in the NRHP under any criteria.

Isolates

ICF-ISO-TE-001

This historic isolate was identified at the base of a steep northeast to southwest-trending drainage and consists of a single pocket, hinged-lid tobacco tin. "Prince Albert" is embossed on the bottom, and no striker plate is present. Two puncture holes are noted in the base, and a single wire-cut nail is still attached.

ICF-ISO-TE-002

This historic isolate was identified in an ephemeral drainage and consists of a single key strip opened, crimped-seam sanitary can; the can appears to have been used for target practice, as evidenced by two bullet holes. This may be associated with recreational use of the land by campers and is considered likely to have been washed downstream to its present location.

ICF-ISO-TE-003

This prehistoric isolate consists of a single red cryptocrystalline silicate secondary flake that measures 4.7 centimeters (length) by 3.2 centimeters (width) by 0.7 centimeter (thickness). The flake is located in an area with numerous unmodified nodules of red cryptocrystalline silicate on the ground surface that appear to originate from the underlying bedrock.

ICF-ISO-TE-004

This prehistoric isolate consists of a single red cryptocrystalline silicate secondary flake that measures 3 centimeters (length) by 2 centimeters (width) by 0.5 centimeter (thickness). The flake is located on the surface of a flat to gently sloping alluvial fan.

Preliminary Evaluation Recommendations

As isolated artifacts, resources ICF-ISO-TE-001 through ICF-ISO-TE-004 lack the context and data to convey their eligibility for listing in the NRHP under Criteria A, B, C, and D. Based on this information, all of the isolated resources listed above were recommended not eligible for listing in the NRHP.

Table 3.6-3. Identified Cultural Resources within the Study Area

Site #	Description	Eligibility Recommendation
P-36-004525/ CA-RIV-4525/H	Historic Barstow-Silverlake Road	Previously determined not eligible for the NRHP.
P-36-064646	Dirt road	Less than 50 years old. Previously determined not eligible for the NRHP.
ICF-NC-001	Historic era circular depression	Not eligible for the NRHP.
ICF-NC-002	Mid-20 th -century insulator concentration	Not eligible for the NRHP.
ICF-ISO-TE-001	Historic isolate: tobacco tin/mining claim	Not eligible for the NRHP.
ICF-ISO-TE-002	Historic isolate: sanitary can	Not eligible for the NRHP.
ICF-ISO-TE-003	Prehistoric isolate: flake	Not eligible for the NRHP.
ICF-ISO-TE-004	Prehistoric isolate: flake	Not eligible for the NRHP.

3.6.2 Environmental Effects

Proposed Action

Although the records review and pedestrian survey identified several archaeological isolates and relocated one of two road alignments that were previously documented in the study area, none of these resources were considered to be eligible for listing in the NRHP. Therefore, no historic properties are located within the study area. As such, the Proposed Action would result in no direct or indirect effects on historic properties. Additionally, the Proposed Action would incorporate environmental protection measures outlined in Chapter 2 of this EA should unknown cultural resources be encountered during surface-disturbing activities.

No Action Alternative

The No Action Alternative would not lead to direct or indirect effects on historic properties because none have been documented with the study area.

3.7 Greenhouse Gases

This section provides an analysis of greenhouse gas (GHG) emissions considerations for the Proposed Action. The first part of this section describes the affected environment. The second part of this section identifies the effects related to GHGs that would result from implementation of the Proposed Action.

3.7.1 Affected Environment

Regulatory Setting

Although federal legislation related to GHG emissions has been introduced and regulations have been promulgated, there is currently no comprehensive policy regarding GHG emissions at the federal level.

Massachusetts et al. v. U.S. Environmental Protection Agency (2007)

Twelve U.S. states and cities, including California, in conjunction with several environmental organizations, sued USEPA to regulate GHGs as a pollutant, pursuant to the federal CAA. The Supreme Court ruled that the plaintiffs had standing to sue, finding that GHGs fit within the CAA's definition of a pollutant, and USEPA's reasons for not regulating GHGs were insufficiently grounded.

As a result of the Supreme Court's ruling, on December 7, 2009, USEPA signed the Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the CAA.

- Under the Endangerment Finding, USEPA finds that the current and projected concentrations of the six key well-mixed GHGs—carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), perfluorinated carbons (PFCs), sulfur hexafluoride (SF₆), and hydrofluorocarbons (HFCs)—in the atmosphere threaten the public health and welfare of current and future generations.
- Under the Cause or Contribute Findings, USEPA finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

USEPA has issued regulations requiring GHG reporting for some stationary sources and has also promulgated GHG emissions standards for cars and trucks, but has not issued comprehensive GHG regulations.

Council on Environmental Quality GHG Guidance

On August 1, 2016, the Council on Environmental Quality issued guidance to assist federal agencies in their consideration of the effects of GHG emissions and climate change when evaluating proposed federal actions in accordance with NEPA.

USEPA Clean Power Plan (2014)

On June 2, 2014, USEPA, under President Obama's Climate Action Plan, proposed a Clean Power Plan, which would be the first to establish national GHG limits for the electric power industry. The proposed rule contains state-specific emission-reduction goals and will help cut carbon pollution from the power sector by 30 percent from 2005 levels by 2030.

State of California

California has adopted statewide legislation to address issues related to various aspects of climate change and GHG emissions mitigation. Much of this establishes a broad framework for the state's long-term GHG emissions-reduction and climate change adaptation program. The governor of California has also issued several executive orders related to the state's evolving climate change policy. Of particular importance to local governments is the direction provided by the 2008 Assembly Bill (AB) 32 Scoping Plan, which recommends that local governments should reduce their GHG emissions to a level consistent with state goals (i.e., 15 percent below current levels).

In the absence of federal regulations, GHG emissions are generally regulated at the state level and typically approached by setting emissions-reduction targets for existing sources of GHG emissions, establishing policies to promote renewable energy and increase energy efficiency, and developing statewide action plans. Summaries of key policies, legal cases, regulations, and legislation at the state level relevant to the County are provided below. Key statewide GHG regulations that are directly applicable to the Proposed Action are also included below.

Assembly Bill 32, the Global Warming Solutions Act of 2006/2011

AB 32 codified the state's GHG emissions target by requiring California's global warming emissions to be reduced to 1990 levels by 2020. Since being adopted, CARB, the California Energy Commission, CPUC, and the California Building Standards Commission have been developing regulations that will help the state meet the goals of AB 32 and EO S-03-05. The scoping plan for AB 32 identifies specific measures to reduce GHG emissions to 1990 levels by 2020 and requires CARB and other state agencies to develop and enforce regulations and other initiatives to reduce GHG emissions. Specifically, the scoping plan articulates a key role for local governments by recommending that they establish GHG emissions-reduction goals for both their municipal operations and the community that are consistent with those of the state (i.e., approximately 15 percent below current levels) (CARB 2014).

Senate Bill 32

Signed by Governor Jerry Brown on September 8, 2016, Senate Bill (SB) 32 requires CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. The law directs CARB to use the maximum technologically feasible and cost-effective GHG emissions reductions to meet the target.

Environmental Setting

The GHGs listed by the Intergovernmental Panel on Climate Change (IPCC) (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) (2013) are discussed in this section in order of abundance in the atmosphere. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources.³ The sources and sinks⁴ of each of these gases are discussed in detail below. Generally, GHG emissions are quantified and presented

³ Although water vapor plays a substantive role in the natural greenhouse effect, the change in GHGs in the atmosphere due to anthropogenic actions is enough to upset the radiative balance of the atmosphere and result in global warming.

⁴ A sink removes from the atmosphere and stores GHGs in another form. For example, vegetation is a sink because it removes atmospheric CO₂ during photosynthesis and stores the gas as a chemical compound in its tissues.

in terms of metric tons of carbon dioxide equivalent (CO₂e) emitted per year. The primary GHGs associated with the Proposed Action are CO₂, CH₄, and N₂O. HFCs, PFCs, and SF₆ are associated primarily with industrial processes and, therefore, are not discussed herein.

To simplify reporting and analysis, GHGs are commonly defined in terms of global warming potential (GWP). IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO₂e. The GWP of CO₂ is, by definition, 1. The GWP values used in this report are based on IPCC's Fourth Assessment Report (AR4) and United Nations Framework Convention on Climate Change reporting guidelines and defined in Table 3.7-1, below (IPCC 2007). The AR4 GWP values are used in CARB's California inventory and the most recent AB 32 Scoping Plan estimate update (CARB 2014).

Table 3.7-1. Lifetime, Global Warming Potential, and Abundance of Several Significant GHGs

Gas	Global Warming Potential (100 years)	Lifetime (years) ^a	Atmospheric Abundance
CO ₂	1	100–300	400 ppm
CH ₄	28	12	1,834 ppb
N ₂ O	265	121	337 ppb

Sources: Myhre et al. 2013; Blasing 2016.

^a Defined as the half-life of the gas, which is the amount of time a gas takes to lose half of its mass, and is a measure of the persistence in the atmosphere.

ppm = parts per million; ppb = parts per billion

CO₂ is the most important anthropogenic GHG. It accounts for more than 75 percent of all GHG emissions emitted by humans. Its atmospheric lifetime of 50 to 200 years ensures that atmospheric concentrations of CO₂ will remain elevated for decades, even after mitigation efforts to reduce GHG concentrations are promulgated (IPCC 2007). The primary sources of anthropogenic CO₂ in the atmosphere include fossil fuel usage (including motor vehicle fuels and coal power plants), gas flaring, cement production, and land use changes (including deforestation).

CH₄, the main component of natural gas, is the second-most abundant GHG and has a GWP of 25 (IPCC 2007). Sources of anthropogenic emissions of CH₄ include rice growing, cattle raising, natural gas combustion, landfill outgassing, and coal mining.

N₂O is a powerful GHG, with a GWP of 298 (IPCC 2007). Anthropogenic sources of N₂O include agricultural processes (e.g., fertilizer application), nylon production, fuel-fired power plants, nitric acid production, and vehicle emissions. N₂O is also used in rocket engines and racecars and as an aerosol spray propellant. In the United States, more than 70 percent of N₂O emissions are related to agricultural soil management practices, particularly fertilizer applications.

3.7.2 Environmental Effects

Proposed Action

Construction

During the construction period, the use of equipment and vehicles would result in GHG emissions stemming from the combustion of fuels. Based on the limited physical extent and duration of construction activities, the emissions would be minimal at each of the pole replacement locations and would be limited to the construction period. Construction-period GHG impacts would be negligible.

Operation

The Proposed Action would provide electricity service to the communication facility on top of Calico Peak. Because the facility is currently powered by a diesel generator, it is assumed that roughly the same amount of total energy would be required and no net increase in energy usage would occur as a result of the Proposed Action. Therefore, no GHG emissions increases stemming from electricity consumption would occur as a result of operation of the Proposed Action. Maintenance activities required for the Proposed Action would involve line patrols at least once per year, but these may occur more frequently. No impact related to operational GHG emissions would occur as a result of operation of the Proposed Action.

No Action Alternative

Under the No Action Alternative, there would be no construction-period GHG emissions, as no construction activities would be undertaken. There would continue to be GHG emissions associated with the use of the diesel-powered generator, however.

3.8 Land Use

This section describes the impacts related to land use that would result from the construction and operation of the alternatives.

3.8.1 Affected Environment

Regulatory Setting

Federal

Federal Land Policy Management Act: The BLM regulates land use within portions of the project area. The 1976 FLPMA, Title V, allows the BLM to authorize ROWs. The FLPMA requires the BLM to prepare a comprehensive land use management plan for land it manages. The FLPMA requires a multiple use strategy to manage public lands and resources in a manner that protects the range of resource values on public lands, including recreation, commercial use, transportation, and wildlife protection. Section 601 of the FLPMA requires that the BLM develop a plan to “provide for the immediate and future protection and administration of the public lands in the California Desert within the framework of a program of multiple use and sustained yield, and the maintenance of environmental quality.” The CDCA Plan of 1980, as amended, accomplishes this requirement of the FLPMA to adopt and implement a comprehensive land use management plan.

State

California Desert Conservation Area Plan: Per title 43 CFR Section 1610.5-3, the BLM must manage the land within its jurisdiction in compliance with a Resource Management Plan. The CDCA Plan covers approximately 25 million acres, 10 million of which are administered by the BLM. The purpose of the CDCA Plan was enacted so that “the use of all California desert resources can and should be provided for in a multiple use and sustained yield management plan to conserve these resources for future generations, and to provide present and future use and enjoyment, particularly outdoor recreation uses, including the use, where appropriate, of off-road recreational vehicles.” The BLM was directed to prepare a plan to accomplish this through the “management, use, development, and protection of public lands within the California Desert Conservation Area,” the northwestern third of which contains the Mojave Desert.

West Mojave Plan: The FLPMA requires the BLM to develop land use plans (also known as Resource Management Plans, such as the CDCA Plan described above) to guide its management of public land. The BLM must determine if the Proposed Action conforms to the CDCA Plan, including the West Mojave Plan, which is an amendment to the CDCA Plan.

Thirty Areas of Critical Environmental Concern were established within the western Mojave Desert. An Area of Critical Environmental Concern is designated by the BLM as a place needing special management to protect and preserve its important biological resources (BLM 2005).

Desert Renewable Energy Conservation Plan: In 1976, Congress designated a 25-million acre expanse of resource-rich desert lands in southern California as the CDCA through the Federal Land Policy and Management Act. In 2009, Congress passed the Omnibus Public Land Management Act, which directed the BLM to include lands managed for conservation purposes within the CDCA as part of the National Conservation Lands. To protect this area's natural resources and facilitate

development of its energy resources, the Desert Renewable Energy Conservation Plan was undertaken in 2013. This collaborative, multi-stakeholder, landscape-scale planning effort comprises 22.5 million acres in the desert regions of seven California counties, 10.8 million acres of which are BLM lands.

Phase I of the DRECP was completed in September 2016. It designated 4.2 million acres as part of the California Desert National Conservation Lands. Much of this land was already a part of the National Conservation Lands (in particular, large portions of the Mojave Trails and Sand to Snow National Monuments), but 2.89 million acres were a new addition to the system. California Desert National Conservation Lands are closed to all energy development.

Conformance with the DRECP is discussed in Section 1.4, *Conformance*, and the completed project-specific DRECP Checklist which shows the project's compliance and applicability with each CMA is located in Appendix A.

Environmental Setting

Land use information, including land ownership and jurisdiction, existing land use, and planned land use, were collected within the study area, which includes the extent of the proposed ROW. Information on land uses in the study area was derived from existing literature, communications with various agencies, and aerial photography interpretation.

The Proposed Action is located in an area of undeveloped desert on public lands administered by the BLM and DOD, US Army Fort Irwin, in the eastern portion of the Desert Region of San Bernardino County. Open space and military uses constitute the majority of the uses in the area, with Fort Irwin National Training Center providing both ground and aviation live-fire training (BLM 2015). The land managing agencies within the study area include the BLM Barstow Field Office and DOD. Table 3.8-1 summarizes the ROW by land ownership.

Table 3.8-1. Approximate Right-of-Way Length and Acreage by Land Ownership

Description	DOD	BLM
ROW Length (miles)	1.42	3.01
ROW Acreage	4.30	9.12
Staging Acreage	0.07	0.43

The BLM stipulates that lands are to be managed in such a way as to foster multiple uses, including use of land and water resources, protecting fish and wildlife, preserving environmental and cultural values, providing for recreation, and managing energy and mineral resources. A portion of the project is within an area designated by the CDCA Plan as Multiple-Use Class L (Limited Use), which provides for “generally low intensity, controlled multiple uses of resource, while ensuring that sensitive values are not significantly diminished.” Under the Multiple-Use Class L designation, “new distribution systems may be allowed and will be placed underground where feasible except where this would have a more detrimental effect on the environment than surface alignment” and “shall be placed within existing rights-of-way where they are reasonably feasible.”

The CDCA Plan was amended in 2005 with the West Mojave Plan. A portion of the project alignment would be within the Superior-Cronese Lakes Desert Wildlife Management Area, an area designated as an Area of Critical Environmental Concern for the recovery and viability of desert tortoise

(*Gopherus agassizii*) as identified in the West Mojave Plan. In 2016 the CDCA Plan was amended again with the DRECP. The DRECP was developed as an interagency plan by the BLM, the USFWS, the California Energy Commission, and CDFW to: (1) advance federal and state natural resource conservation goals and other federal land management goals; (2) meet the requirements of the federal Endangered Species Act, California Endangered Species Act, Natural Community Conservation Planning Act, and FLPMA; and (3) facilitate the timely and streamlined permitting of renewable energy projects, all in the Mojave and Colorado/Sonoran desert regions of Southern California. The DRECP LUPA established land use allocations throughout the DRECP project area including DFAs, VPLs, General Public Lands, BLM Conservation Areas, and BLM Recreation Areas.

- **Development Focus Areas (DFAs)** represent the areas within which the activities associated with solar, wind, and geothermal development, operation, and decommissioning will be allowed, streamlined and incentivized. Transmission development and operation will occur in previously designated corridors and other identified areas, both inside and outside the DFAs.
- **Variance Process Lands (VPLs)** consist of variance lands that have undergone further screening and additional lands with moderate-to-low known ecological value and ambiguous known value for renewable energy. These lands are open for solar, wind, and geothermal energy applications under the BLM LUPA. However, all solar, wind, and geothermal energy development applications have to follow a variance process before the BLM would determine whether to continue with processing them. Applications in VPLs would not receive the incentives that apply to DFAs.
- **General Public Lands** are BLM-administered lands that do not have a specific land allocation or designation, such as DFA, ACEC, Special Recreation Management Area (SRMA), etc. These areas are open to renewable energy applications but do not benefit from the renewable energy streamlining or incentives.
- **BLM Conservation Areas.** Under the LUPA, the following conservation designations are part of the DRECP Biological Conservation Strategy: NLCS (including California Desert National Conservation Lands, Wild and Scenic Rivers, and National Scenic and Historic Trails), ACECs, and Wildlife Allocations.
- **Recreation Management Areas.** The LUPA includes two types of recreation management areas: SRMAs and Environmental Response Management Applications (ERMAs).

The Fort Irwin National Training Center is a major training area for the Department of the Army. Fort Irwin manages its land to provide realistic test and training environments for military operations, as required by Title 10 (Armed Forces) of the U.S. Code. It has been used for anti-aircraft, armored, and mechanized training for regular Army and National Guard units since 1940. Fort Irwin was selected as the National Training Center for the U.S. Army in 1979. Fort Irwin National Training Center encompasses approximately 1,179 square miles of land northeast of Barstow, California. Approximately 1.42 miles of the proposed distribution line would occur on lands owned by the DOD and managed by Fort Irwin, but not directly associated with the National Training Center mission.

3.8.2 Environmental Effects

Proposed Action

The Proposed Action would require permanent and temporary facility ROW for the construction, operation, and maintenance of the 33 kV overhead distribution line extension.

Indirect impacts from construction of the Proposed Action would include temporary conversion of undeveloped desert land to utility-related uses for staging areas. Direct impacts would result from permanent conversion of undeveloped desert land at the individual pole locations and within the proposed ROW. Once installation of the Proposed Action is complete, access for repairs would be by existing access routes or overland travel.

Operation and maintenance of the proposed distribution line would not conflict with existing federal, state, or county land use plans, policies, or regulations applicable to the project area. Impacts from road access would be minimal because no new roads would be created as part of the Proposed Action. Furthermore, the Proposed Action would be consistent with the goals and guidelines set forth in both the CDCA Plan and its amendments including the West Mojave Plan and the DRECP. With implementation of the environmental protection measures included in the associated Biological Assessment and Chapter 2 of this EA, the Proposed Action would not impair the planning goals set forth in the CDCA Plan, West Mojave Plan, or DRECP. Therefore, no adverse impacts on land use are anticipated.

No Action Alternative

Under the No Action alternative, the Proposed Action would not be constructed; therefore, no adverse impacts on land use would occur.

3.9 Visual Resources

This section describes the impacts related to visual resources that would result from the construction and operation of the alternatives.

3.9.1 Affected Environment

Regulatory Setting

Federal Land Policy and Management Act of 1976

The FLPMA (43 U.S. Code 1701) and the U.S. Department of the Interior's BLM Land Use Planning Handbook (2005) both emphasize the importance of protecting the quality of scenic resources on public lands. The FLPMA's legal mandate to protect the quality of scenic resources on public lands is carried out by BLM and detailed in BLM's Visual Resource Management (VRM) system (BLM 2012).

Bureau of Land Management Visual Resource Inventory and Management Guidance

The BLM, through the FLPMA, is charged with protecting the scenic value of the public lands. The BLM has developed and uses the VRM system to identify, set, and maintain those scenic values. The VRM system is based on inventorying visual resources and managing those resources. Through the Visual Resource Inventory process (BLM 1986a), the BLM identifies the visual resources of a given area and, based upon specific standards, assigns an inventory class to each area (described in detail below). The four Visual Resource Inventory classes (Classes I through IV) are the foundation upon which the BLM considers visual values in its management planning processes.

Environmental Setting

The BLM is responsible for ensuring that scenic values of public lands are considered prior to allowing uses that may have negative visual impacts. To accomplish this, the BLM employs its VRM system. The VRM system maintains an inventory of scenic values and establishes management objectives for those values through resource management planning and evaluating proposed activities to determine whether they conform to VRM objectives. In order to maintain scenic values of public lands, the VRM considers the following:

- Different levels of scenic values require different levels of management. An assessment of an area's scenic values is required to determine how it will be managed.
- Scenic value assessment and determining visual impacts can be subjective.

Visual resources are classified via a Visual Resource Inventory process. The process involves rating the visual appeal of a tract of land, measuring public concern for scenic quality, and determining whether the tract of land is visible from travel routes or observation points. Based on these parameters, lands are placed into four Visual Resource Inventory classes: VRM Classes I, II, III, or IV. VRM Classes are categories assigned to public lands and act as inventory tools that portray the relative value of the visual resources and management tools that portray the visual management objectives.

Per the BLM Handbook H-8410-1, *Visual Resource Inventory*, the following are objectives for each of the aforementioned VRM Classes.

- **Class I:** The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- **Class II:** The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any change must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- **Class III:** The objective of this class is to partially retain the existing character of the landscape. The level of change to the character should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- **Class IV:** The objective of this class is to provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

The Proposed Action falls within the DRECP area. The DRECP renewable energy and conservation planning effort covers more than 22 million acres of California desert, and is a collaboration between the California Energy Commission, CDFW, BLM, and USFWS to provide effective protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy. According to the 2016 *Desert Renewable Energy Conservation Plan Land Use Plan Amendment and Final Environmental Impact Statement* (BLM 2015), the Proposed Action would be located in VRM Classes III and IV lands. A Visual Contrast Rating is applied to analyze the potential visual impact of a proposed project and activities on BLM lands (BLM 1986b). The Visual Contrast Rating is measured by comparing the project features with the major features in the existing landscape. The basic design elements of form, line, color, and texture are used to make this comparison and to describe the visual contrast created by the project. This assessment process provides a means for determining visual impacts and for identifying measures to mitigate these impacts. Per the BLM Manual 8431, *Visual Resource Contrast Rating*, the varying degrees of contrast are:

- **None:** the element contrast is not visible or perceived.
- **Weak:** the element contrast can be seen but does not attract attention.
- **Moderate:** the element contrast begins to attract attention and begins to dominate the characteristic landscape.
- **Strong:** the element contrast demands attention, will not be overlooked, and is dominant on the landscape.

In order to describe the existing visual characteristic landscape and make an assessment of potential project impacts, viewing locations called key observation points (KOPs) were identified. Factors considered in the selection of KOPs are angle of observation, number of viewers, length of time the project is in view, relative project size, season of use, and light conditions. Linear projects such as the Proposed Action are rated from several viewpoints representing: (1) most critical viewpoints

(e.g., views from communities, road crossings), (2) typical views encountered in representative landscapes, if not covered by critical viewpoints, and (3) any special project or landscape features such as skyline crossings, river crossings, substations, etc. Visual impacts are not expected at the southern end (including motorists traveling along the Mojave Freeway or traveling north along Calico Road or up through the Calico mountains via Doran Scenic Drive, and people residing in the cities of Yermo and Daggett) of the project area, as only the communication tower at the top of Calico Peak would be visible from the south due to the area's topography.

The KOP for the Proposed Action is at the northwest terminus of the proposed distribution line (where the proposed distribution line would intersect Irwin Road). The Proposed Action line would connect to a pre-existing distribution line on the northwest side of the roadway. Primary viewers at the KOP would consist of motorists traveling north and south along Irwin Road. The duration of view would be short as travelers commute along Irwin Road.

The landscape characteristics looking from the KOP consist of gently rolling terrain in the foreground with a slight incline toward the Calico Mountains in the background. Light brown to reddish-brown soils occur in the foreground with brown, reddish-brown, and dark brown mountains in the background. Vegetation in the landscape includes evenly spread shrub patches of brown and olive green.

3.9.2 Environmental Effects

Proposed Action

Short-term visual effects associated with the Proposed Action can result from temporary disturbances, such as construction and installation activities. Long-term effects would result from the addition of permanent structures to the landscape. The Proposed Action's visual impact looking from the KOP identified above was evaluated under VRM Class III objectives. The KOP would meet the VRM Class III objectives as analyzed in the Visual Contrast Rating Worksheet (Appendix C).

Construction of the Proposed Action would entail installing new single wood poles, anchors, and down guys, and removing existing wood poles. Short-term visual effects during construction activities can include the presence of equipment and vehicle traffic, in addition to storage of construction materials in proposed staging areas. However, these impacts would be temporary and would only occur while construction activities are underway. Access to facilities would involve the use of existing streets and existing dirt and two-track roads to the greatest extent possible, as no blading or grading of any new access roads would occur. Where no established path exists, crews would travel on foot to reach work sites and use helicopters to deliver and set wood poles. Furthermore, and as described in Chapter 2, construction personnel would avoid crushing vegetation as much as possible. Because construction impacts would occur only on a temporary basis, no significant short term visual impacts would occur during implementation of the Proposed Action.

Due to the open desert landscape in the area, it is anticipated that the new linear contrast would create a permanent visual change, both with the addition of the distribution line infrastructure and with areas of soil disturbance near poles. However, the Proposed Action would meet VRM Class III objectives and would not dominate the view of the casual observer while traveling along Fort Irwin Road (the Proposed Action footprint would be minor in comparison to the open desert landscape). Additionally, Fort Irwin Road is not a high-traffic roadway as it connects Fort Irwin (at its northeast

terminus) to Interstate 15 and the city of Barstow to the southwest. Fort Irwin Road is not classified as a Designated Scenic Highway per the Caltrans Scenic Highway Program (Caltrans 2016). Furthermore, the Proposed Action would only be observable to motorists traveling along Fort Irwin Road for a very short time as they commute by. Therefore, no significant long-term visual impacts would occur.

No Action Alternative

Under the No Action Alternative, the applicant would not extend the existing Remote 33 kV overhead distribution line and, as such, no visual impacts would occur.

3.10 Cumulative Effects

As required under NEPA and the implementing regulations, this section analyzes potential cumulative impacts of the Proposed Action combined with past, present, and reasonably foreseeable future actions in the area analyzed for each resource for which cumulative impacts may be anticipated. A cumulative impact is defined as:

The impact which results from the incremental impact of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR 1508.7).

The analysis of cumulative effects used a watershed-level approach to evaluate potential cumulative impacts. The Proposed Action is located within the Mojave watershed (HUC 18090208). There are currently 15 active or recent NEPA planning projects within the Mojave watershed. Eleven of those projects are being processed as categorical exclusions, two through environmental assessments, and two through environmental impact statements. The other primary past and present actions that have affected and are currently affecting the resources analyzed in the region surrounding the Proposed Action are wildlife and game habitat management, livestock grazing, wildland fires, dispersed recreation, ROW construction and management, and mineral exploration and mining. Reasonably foreseeable future actions expected to occur in the region are similar to past and present actions and could include livestock grazing, wildlife and game habitat management, mineral exploration and mining, ROW management, wildland fires, and dispersed recreation. Proposed Actions for these activities are proposed based on funding and management priorities, and few activities are currently planned.

Three other electrical infrastructure projects are currently proposed on BLM lands but have not yet started the NEPA process: the Kelly Cutover Project, the Doble 33 kV Rebuild Project, and the Coolwater-Tiefert Project, all proposed by SCE. No other substantial actions are currently proposed on BLM lands in the vicinity of the Proposed Action. Proposed activities in the region, if proposed in the future, could result in adverse effects on biological resources, cultural resources, air quality, soils, and water resources; however, each of those future activities and actions would be required to implement the CMAs and the overall conservation strategy set forth in the DRECP. Ensuring consistency with the DRECP and CMAs through implementation of the environmental protection measures outlined Chapter 2 will help avoid and minimize the potential for cumulative effects from the Proposed Action. Overall, the proposed action is not expected to contribute to cumulative effects with implementation of the CMAs.

3.11 Other Required Analyses

3.11.1 Unavoidable Adverse Effects

The analysis within this EA has found that for each issue analyzed, none of the alternatives would result in an unavoidable adverse effect.

3.11.2 Short-Term Benefits vs. Long-Term Productivity

The benefits of the Proposed Action would be realized throughout the life of the project through a more reliable and less costly delivery of permanent energy to the communication facility. During construction of the Proposed Action, there would be effects on the existing productivity of the lands that would be affected. Currently, the lands surrounding the project area provide for recreational opportunities, wildlife and game habitat management, and military operations. However, many of the impacts associated with the Proposed Action would cease to be adverse following construction of the project, and no significant long-term adverse effects on the productivity of the project area are expected.

3.11.3 Irretrievable Commitment of Resources

Physical resources would be used to construct the project including the use of wood poles, concrete (transformer pad only), and metal (conductors and anchors). Most of the materials, particularly the metal components, would have value, and would likely be recycled or reused at some point in the future. As such, only a portion of the physical materials that would be used could be considered irretrievably committed or permanently lost.

Some water may be used to control dust and to mix concrete; however, the amount used is expected to be minimal. The use of this water would be considered irretrievable once the purposes for which it would be used were completed.

Lastly, fossil fuel would be burned and permanently lost during construction of the Proposed Action, and limited amounts of fossil fuel would be similarly lost during the operations and maintenance phase of the project. The fossil fuel, once used, would be irretrievable.

4.1 Persons, Tribes, Organizations, or Agencies Consulted

Person, Tribe, Organization, or Agency

Department of Defense

U.S. Fish and Wildlife Service

State Historic Preservation Office

California Department of Transportation (Caltrans)

Tribes contacted by DOD:

- Bishop Paiute Tribe
- Colorado River Indian Tribes
- Timbisha Shoshone Tribe
- Cahuilla Band of Mission Indians
- Morongo Band of Mission Indians
- Big Pine Paiute Tribe of Owens Valley
- Fort Independence Reservation
- San Manuel Band of Mission Indians
- Cabazon Band of Mission Indians
- Chemehuevi Indian Tribe
- Fort Mojave Indian Tribe
- Lone Pine Paiute Shoshone Reservation

Tribes contacted by BLM:

- San Manuel Band of Mission Indians
 - Chemehuevi Indian Tribe
-

5.1 Introduction

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Chapter 6

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Appendix A Conservation Management Actions

Appendix B Typical Structure Configurations

Appendix C Visual Contrast Rating Worksheet

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